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OUTLOOK '86

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Agricultural Outlook Conference

United States Department of Agriculture

Dec. 3-5, 1985
Washington, D.C.

PREFACE



These pages contain the proceedings of the U.S. Department of Agriculture's 62nd annual agricultural outlook conference. Included are all papers submitted by those participating in the program. As noted in the Contents, no papers were presented during several follow-up sessions where discussion continued between speakers and the audience.

Outlook '86 took place at USDA headquarters in Washington, D.C. on December 3-5, 1985, with 800 people in attendance. In addition to the traditional coverage of the outlook for the farm economy and major commodities, rural Americans and food and nutrition, conference speakers addressed issues of farm policy, financial conditions in the farm sector, trade policy and biotechnology. Readers will find these concerns well represented in this proceedings.

Outlook '87 is tentatively set for December 2-4, 1986. All those who receive a copy of this publication will be sent preliminary information prior to the conference.

James R. Donald

JAMES R. DONALD
Chair, Conference Steering Committee

February 1986

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TUESDAY, DEC. 3			
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9:15-10:15	(1) Opening Session		
	General Outlook		
10:30-12:30	(2) Economic, Agricultural, and Trade Outlook		
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2:15- 3:15	(6) Marketing and Food Prices	(11) Livestock/Dairy (3:00-4:30)	(15) Sweeteners
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	Agricultural Trade Issues	Agricultural Outlook	
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11:00-11:50		(21) Rural Development (11:00-12:30)	(24) Forest Products

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WELCOME TO OUTLOOK '86
John R. Block
Secretary of Agriculture

Annual Agricultural Outlook Conference
Session #1, Washington, D.C.

For release: December 3, 1985

OUTLOOK '86



It is indeed a pleasure for me to welcome all of you to this 62nd annual agricultural outlook conference.

The original purpose behind these conferences was to provide farmers with the latest information on seed varieties and crop development.

But over the years, this conference has evolved in scope to become a major vehicle for sharing information on a wide range of agricultural issues -- issues that not only affect the livelihood of American farmers, but also heavily influence the basic survival of millions of people throughout the world.

Trade policy is a common thread connecting many of these issues. And that is one reason why I am delighted to share the podium this morning with Clayton Yeutter. Before introducing him, however, I want to set the stage for his discussion of trade policy.

As many of you know, there are other discussions taking place this week that impact upon agriculture.

Between the House and Senate conferees' negotiations on a new farm bill ... Congress' consideration of farm credit legislation ... the debate over the Gramm-Rudman balanced budget plan ... and the aftermath of last week's annual meeting of GATT members -- American agriculture is poised at one of its most crucial points in history.

I feel safe in saying that no one is happy with the present shape of this year's farm legislation. Congress, the Administration and agricultural leaders have slogged through a long, tedious and sometimes arduous process to arrive at this point.

And that process is not over yet. Nonetheless, some self-styled experts have already cast a yoke of defeat upon those collective efforts.

Personally, I am not yet ready to consign the 1985 farm bill to the policy scrapheap. Even though I'm opposed to some provisions, I believe everyone needs to take stock of what has been accomplished.

First and foremost, both the House and the Senate have taken the first step towards reversing the policy framework of farm programs and recognized the need of American farmers to adapt to the fluctuations of market conditions. This represents a major, constructive change in farm policy formulation.

For the past 50 years, Congress periodically assessed conditions in rural America. Based upon assumptions and forecasts, it would then attempt to extrapolate conditions for succeeding years and legislate programs that cast those assumptions into stone -- leaving no room for flexibility.

But -- as we know so well today -- that approach has failed. All you need to do is look back to the Outlook Conference five years ago, and recall the projections made then for the year 2000.

In 1981, population growth was projected to exceed the production of food and fiber. Energy costs were projected to rise to levels beyond anything Americans had ever experienced. Our farmland and other resources would be utilized to full capacity.

In essence, the great American food factory was going to be challenged as never before to provide global stability and help assure world peace!

However, we all know what happened. Actions taken based upon those mistaken projections set the stage for today's problems.

We locked in high price supports, and in so doing, locked in higher land prices. We drained huge outlays from the federal treasury, adding to the budget deficit, and increased the pressure upon interest rates.

As a result, we priced ourselves out of many world markets, and sowed the seeds of the financial distress that now haunts us.

The second major improvement contained in the pending legislation is the recognition that loan rates need to be reduced and keyed to market prices. Both the House and Senate bills grant the Secretary of Agriculture authority to make downward adjustments in loan rates so as to respond quickly to competitive pressures in world markets.

A third major change is the Senate's provision to permit reduction of the milk price supports beginning in 1987. The experience over the past five years with the dairy program provides continuous reinforcement that it's unrealistic to expect any scale-down in production when milk prices are artifically increased through legislated adjustments.

And let me say once again to those who are forecasting conditions in the dairy industry: any attempt to hold on to the House provision for a dairy assessment and diversion program greatly increases the chances of a Presidential veto. It's difficult for me to conceive that neither the dairy industry nor the Congress has learned from the failure of the past diversion program.

The final point I want to make relative to the farm bill is that, for the first time, farm program benefits would be tied to good conservation practices.

The provisions to deny subsidies, crop insurance and federal loans to landowners who engage in "sodbusting" and "swampbusting" is long overdue. Further, the establishment of a conservation reserve to protect our highly erodible land is like putting money in the bank for future generations.

Perhaps the most important point to make today is the need to complete this bill as soon as possible. Many farmers have already had to plant next year's crops, and others are making planting decisions now.

Everyone concerned with U.S. agriculture should hope the Senate and House conferees will not delay in agreeing upon farm legislation which the President can sign. Farmers, agribusinesses and bankers need to know what role the government will play in agriculture over the next four-to-five years.

In addition, a strong signal must be sent to our competitors overseas -- making crystal clear that the United States is serious about, and committed to, regaining its competitiveness in world markets.

We are nearing the finish line in making major legislative strides that will benefit American farmers for decades to come:

* First, through a farm bill that shifts the emphasis of farm programs toward a market-oriented agriculture; and,

* Second, through the implementation of a stable economic policy grounded upon the foundation of a balanced budget.

With greater market orientation, U.S. farm products will once again become fully competitive in the global marketplace. I cannot state strongly enough how essential it is to the economic vitality of American agriculture to complete this transition to a market-oriented farm policy!

Further, reduction of the federal deficit is perhaps the single most important economic and legislative initiative to rural America in this decade!

Farmers have paid dearly for the growing deficit, through lost export markets and depressed commodity prices. When we borrow abroad to satisfy public and private credit demands, the exchange rates go up -- and it's the American farmer who pays a large chunk of the bill.

Another key factor underlying the outlook projections made this week has to be the state of the farm credit system. I won't go into great detail on the problems that system faces. What is important is that, today, the Senate will take up landmark legislation to reform the farm credit system. Action in the House will likely occur within the next few days.

I can assure you this Administration will not abandon farmers, nor will it abandon the system that holds over one-third of farmers' debts. As the Administration approaches this problem, our single greatest priority is to ensure that farmers can obtain reasonable credit at equitable interest rates.

This Administration has been deeply involved in helping to formulate the legislation pending before the Congress. We strongly support both the massive overhaul it would make in the structure of the farm credit system, and the requirement that the system must pool its resources before seeking other funding.

The third major area of concern to American agriculture right now is trade policy. Last week, the member countries of GATT met to -- among other things -- set up the machinery for planning a new round of trade negotiations. American farmers are vitally concerned -- now more than ever -- with both the timetable and the substance of such negotiations.

As Secretary of Agriculture, and as a farmer, I get very frustrated with the GATT process. However, given the rising tide of protectionism around the world, and the impact this has on U.S. agriculture, we must work within the GATT process to strengthen the rules that govern our world trading system.

Consequently, it gives me a great deal of pleasure to share the platform this morning with Clayton Yeutter, who certainly needs no further introduction here today.

American farmers are indeed fortunate that Ambassador Yeutter brings to his job the hands-on experience of a highly successful Nebraska farmer, a college agricultural administrator, a diversity of government experience, and the hard-nosed business sense of a commodities exchange regulator.

Since becoming U.S. Trade Representative, Clayton has played a critical role in formulating a comprehensive trade policy. As a result, several actions have been initiated -- some involving agricultural products -- against trading partners who engage in unfair trade practices.

Suffice it to say that U.S. agriculture's interests are well served under Clayton's leadership. With that introduction, I am pleased to present him today at this Outlook Conference. Clayton ...

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TRADE POLICY
Clayton Yeutter, U.S. Trade Representative
Office of the U.S. Trade Representative

Annual Agricultural Outlook Conference
Session # 1, Washington, DC

For Release: Tuesday, December 3, 1985

Thank you, Secretary Block, it's really nice to be here. This is the first time I've stood at the podium in this room in perhaps 10 years. It's good to be back and I wish I had time to visit individually with a lot of friends who are sitting in the audience. I must say that I really enjoyed your report, Secretary Block. I would say publicly to all of you that it has really been a delight for me to work with Jack and everyone on the USDA team since I've been back in government these last 5 months. We have had a chance to work on a lot of issues and some pretty tough ones, and hopefully we're making some progress.

As Secretary Block indicated, we have been attempting to increase the level of aggressiveness of U.S. trade policy. While I would assume that is evident by now, I would like to illustrate with four or five specific examples before discussing broader trade policy issues.

For the benefit of this audience, let me concentrate on the agricultural side. One relatively small case, of interest mainly to those of you who have come from out West, is a canned fruit dispute that we've had with the European Community under Section 301 of the Trade Act. Section 301 gives the United States the privilege of retaliating against unfair trade practices of another country if that country doesn't remove those practices. Industry has initiated many such cases through the years. Agriculture and agribusiness have probably initiated more of them than any other sector. These cases have been pursued with a mixed degree of success because a lot of them have bogged down in the GATT process; I'll have more to say on that later. But under the more aggressive policy that we've articulated in the last few months, the U.S. government has begun to initiate some new cases and in a couple of instances, has accelerated the timetable on existing cases. In fact, the President accelerated the canned fruit case, which had been before the GATT for a long time, setting a December 1 deadline for resolution. We have extended that Sunday deadline by one day to Monday, a work day, and settled that case with the European Community. We will be making an official announcement on that a little later today. While it is not so important in trade flows, it is important in terms of precedent and the principles that are involved, because it involves the canning subsidies of the European Community.

A second example, of importance to the livestock industry, is the effort we are making to get Japan to lower its very restrictive quotas on leather and leather footwear. This case is under negotiation right now. It, too, had a midnight deadline, but we had to stop the clock because of some differences of opinion over the basic numbers involved. We'll go back shortly and see what we can do about bringing this case to a conclusion within the next few years. If we can, that will be a significant result as well.

Another trade dispute important to farm interests in both the West and the Southeast is the so-called citrus-pasta war with the European Community. As you may know, we retaliated a few months back, and the Community countered with their own retaliation. A truce was called through October 1, but we didn't resolve the matter by that date. We retaliated again, and the Community counter-retailiated. Now we have to decide whether we're going to counter-counter-retaliate and I suppose the Community will have to decide whether it wants to counter-counter-counter retaliate, but we'll cross that bridge when the time comes.

A fourth example of our assertive posture in trade is the possibility of action under Section 301 on U.S. tobacco product exports to Japan. We hope to significantly expand export opportunities for American cigarette producers. This one is interesting to me because I've had a substantial amount of correspondence from the tobacco growers (precipitated by the Japanese, obviously) saying, "Please don't do anything in this 301 case to jeopardize our leaf exports to Japan." And Japan is a good leaf market.

USDA has long made the case, both during my years and during your years as well, Secretary Block, that what we really want to do is sell value-added products around the world. In this particular case, the United States would benefit more from selling cigarettes than it would from selling leaf tobacco, because we get the benefit of the value added in converting the tobacco to cigarettes. So, we shouldn't be engaged in a shortsighted protection of the leaf tobacco market if we can achieve substantial benefits by opening up the market for the processed product. In other words, I'm asking those of you who have some involvement with tobacco growers to tell them that there is something to the value-added concept and we ought to recognize it for tobacco just as we do for soybeans or anything else. We'll certainly try to get some additional access in the 301 case on tobacco before we're through.

My last example is a major controversy with the European Community over wheat. This is a GATT subsidy case, filed not only because we have problems with the Community's export subsidies on wheat but also to send a clear signal to the Community that we're concerned about their subsidy practices as an overall issue. It illustrates one of the reasons why we need to have serious discussions about agricultural trade issues generally. This case, in essence, lays down the marker for further discussions with the Community and others on trading practices in wheat and other grains as well.

Let me move on to broader issues. Secretary Block mentioned the issue of macro-economic policy. The federal budget deficit, which reflects our economic and fiscal priorities, has had an impact on the dollar, adversely affecting trade flows. It also has an impact on interest rates, which have some relationship to the dollar and are important in terms of input costs in agriculture. All of that relates together. I happen to agree with Secretary Block's comment that the best farm program we can have would be a federal budget deficit reduction program. That really is the key factor. It is much more important than anything that we do in farm legislation and hopefully we're beginning to make a little progress. We've got a long way to go. We're still operating at something in the vicinity of $200 billion federal budget deficits. That's just inexcusable and intolerable. As American citizens we ought to insist that our government do better. Agriculture probably has the greatest stake of any individual industry in that objective.

As a result of the so-called G-5 meetings in New York, chaired by Jim Baker several months ago; the IMF meeting in Seoul, Korea, which got into the issue of LDC debt problems; and other factors, the dollar's value has come down about 20 percent this year against other currencies. That hasn't shown up in the trade flows yet, and probably won't until late 1986, because of the lag time involved, but at least the trend is tilting in the right direction. Now there are some indications the Japanese are adjusting prices on some of their products coming into the United States because of the alteration in the dollar-yen relationship. That will have a positive effect going back the other way, too, for U.S. agricultural exports. So, the macro-policy scene is getting a little better. It just needs to get a whole lot better in order to have a significant effect on farm income.

Secretary Block mentioned the new GATT round. We obviously are very pleased with the meeting that took place in Geneva last week. We're happy about it not only from the standpoint of the United States but from the standpoint of the world as a whole. The GATT is in a great deal of jeopardy as an international institution and it is just imperative that we get a new round of negotiations going relatively soon.

We had to overcome a lot of intransigence from some of the developing nations lead by Brazil and India. They finally backed off in their positions and acceeded to the establishment of a preparatory committee. We also had some objections, primarily to dates, from others including the French, but agreements were reached and the preparatory committee, which is to plan the new round of negotiations, has a July 15, 1986, deadline. It will make recommendations to the trade ministers of the GATT member nations and those ministers--myself and my colleagues--will meet in September at a place yet to be determined to launch the new round.

As Secretary Block indicated, we have to make sure that agriculture is one of the primary negotiating issues of a new GATT round. Agriculture should also have an interest in a good many of the other topics that will be negotiated in a new GATT round. One is the question of the subsidies code, which isn't working very well. We certainly need to make some changes in that code and that has implications for agriculture. We will insist that the round will cover some new areas. One of them is intellectual property, that is, patents, copyrights and trademarks. Patents on products like agricultural chemicals are important to agriculture. The manufacturers can't spend millions on research for products that benefit the agricultural community if those products can simply be pirated internationally. Another priority area for the United States is services, which was the source of most of the contentiousness at Geneva last week. GATT has no rules covering services, yet such services as banking, insurance and data processing are essential for trade. A third priority is streamlining the GATT dispute settlement process. Many of the organizations represented in this room can attest to the frustration of filing a GATT case only to have it drag on for years and years. We've got to change that mechanism and improve it dramatically if GATT is going to work. The citrus people have been working on their case for 16 years and it still hasn't been brought to a resolution.

Finally I would like to comment on a few specific issues.

The textile bill is coming up for a vote in the Congress today. Later this week you are going to have Carlos F.J. Moore, a USTR alumnus, who now is the Executive President of the American Textile Manufacturers Association on your program. He will explain to you why his industry needs protection. In my judgement the textile industry does not have a very persuasive case. Moreover, the textile bill is one of the largest threats to agriculture today. It will be voted on in the House and presumably passed today and sent on to the President. Although I do not wish to preempt the President's prerogatives in this area, a veto is almost a sure thing. If that bill becomes law, retaliation by the adversely affected countries is almost assured and it shouldn't be too hard for anybody in this room to figure out where that retaliation is likely to take place. Agriculture is the primary candidate because most of the countries that would be adversely affected by the bill are major importers of agricultural products. If those countries have a choice, as currently they do given large world supplies, they can buy elsewhere in retaliation against us. Thus, agriculture has a big stake in the ultimate disposition of this legislation.

Congress will continue to deal with trade issues next year. Nothing is going to happen on the broader trade bills this year, but the issue will certainly be a live one in 1986. There have been a host of what I would call omnibus trade bills or mini-omnibus trade bills introduced in recent weeks. They'll be the subject of hearings next year and my opinion is that ultimately this sort of legislation will and should emerge. I'm encouraged that Congress is beginning to concentrate on positive kinds of trade legislation rather than all the blatantly protectionist bills such as the one involving textiles and apparel. All of your organizations in the agricultural community should make yourselves heard on these issues next year, because what ultimately emerges in the way of trade legislation will be very important to you--perhaps more important than the farm legislation emerging this year.

If all goes according to schedule, we'll probably begin what we call free trade discussions with Canada next spring. This could be the most significant bilateral trade negotiation in U.S. history and could open up markets between Canada and the United States in a very major way. Negotiations will probably last two or three years. A major private sector advisory process is being provided for. Agriculture, of course, has a big stake in these negotiations. The United States and Canada are major farm trade partners; we are competitors in some cases; and there are significant differences between our two systems. If an essentially free trade arrangement between us emerges, there are going to have to be some adjustments in the agricultural systems of both nations.

Turning now to our neighbor to the south, we have a number of trade disputes with Mexico, including a good many in agriculture. As you may have seen from the headlines last week, Mexico has applied for GATT membership. We have strongly encouraged this step and think it a positive development. Of course, we must be concerned with the terms of accession because that could affect trade between the United States and Mexico. In addition, we are concerned about how we handle bilateral disputes between the United States and Mexico and we are in the process of negotiating what we call a framework agreement which will be the umbrella for handling bilateral trade issues of all kinds between the two countries. We hope to negotiate that framework over the next several months.

My last comment concerns China. There are indications that China will soon ask for a renewal of its GATT membership. That's an interesting development because Taiwan was the China that originally was a GATT member. Taiwan dropped its membership a good many years back and now the People's Republic of China has indicated that it would like to renew. If they make this request officially, that will raise some interesting geo-political and economic questions, including what the terms of accession or membership renewal should be. China is big potential factor in agricultural trade, so the move toward GATT membership could have a lot of potential significance down the line.

THE ECONOMIC OUTLOOK: RISKS IN A FOURTH YEAR OF EXPANSION

Preston Martin
Vice Chairman, Board of Governors, Federal Reserve System

Annual Agricultural Outlook Conference
Session #2, Washington, D.C.

For release: December 3, 1985



We are fast approaching the end of the third year of economic expansion. The sluggish pace of expansion in recent years has led some to question whether economic growth will continue in 1986: the downside risks warrant review. In contrast, the slightly accelerated pace of expansion in the third quarter has caused observers who focus on growth of the narrow monetary aggregated, M1, to predict a major rebound in both economic growth and inflation next year. The middle ground for the majority of forecasters calls for continued moderate economic growth without a substantial increase in inflation. Yet the recent record of such prognostications has been dismal for the dismal scientists. The old tried and true relationships built into econometric models are difficult to apply in todays changed and changing economic world. The major risks I foresee are on the downside.

Recent Economic and Inflation Performance

The U.S. economy has been tottering on the brink of a growth recession over a year. As you know, real GNP has advanced at a pace of less that 2½ percent over the last five quarters, and this growth has been very uneven. Most of the growth in output and employment has been in the service sector: industrial production and employment in goods-producing sectors have been virtually stagnant. As a result of this stagnation, the overall unemployment rate has been stuck at around 7¼ percent.

Our economy has remained sluggish in the face of a substantial decline in interest rates. Both short-term and long-term interest rates have declined in the range of 3 to 4 percentage points since the middle of last year. Actual and perhaps expected inflation has declined much less, so real interest rates have dropped substantially. Nevertheless, sectors that traditionally have responded to interest rate declines of this magnitude have not shown much resurgence this year.

Housing starts, for example, have trended downward despite lower mortgage interest rates. This reflects in part the more stringent lending standards imposed by FNMA and other mortgage lenders and by mortgage insurers. The caution apparent in mortgage markets reflects increased concern about higher delinquencies and the leveling of consumers stretching their financial resources. Lenders have oversold easy credit. Have you checked your mail this morning? Anticipation of even lower mortgage rates may also have been at work holding down housing sales.

A more important aspect has been the growing international trade deficit. Some interest-sensitive spending has grown at a healthy pace in recent quarters. But because of the overvalued dollar, much of the demand for consumer durables and for business capital goods has been met by imports. Over the last six quarters, imports have surged about $30 billion, while exports have declined -- driving a wedge between the relatively healthy growth in spending and the anemic growth in production.

We are contending with growth below trend in part because of the maturing of this expansion. Typical in the early part of the economic recovery, pent-up demand for housing, consumer durable goods, and business equipment -- along with a need to restock inventories -- led to a spurt of growth. After adjustment to higher desired inventories, spending rates declined in line with income growth. (Consumers have been a disturbing exception.) This uneven pattern is not uncommon -- several other postwar expansions have had periods of slow growth after the first few quarters. However, the degree of slowdown this time has been unusually pronounced, again, in part due to the rapid deterioration of the U.S. trade balance. Since the second quarter of last year, real domestic spending has increased nearly $400 billion, but real domestic production has increased only about $250 billion. Thus, about one third of the growth in spending has been siphoned off by the growing trade deficit. Importantly, the mega deficit in trade has kept some sectors of the economy -- including agriculture -- in a virtual depression.

The strong dollar has also had some positive aspects. It has helped keep U.S. inflation at one of the lowest rates in two decades, only about 3½ percent this year, foiling forecasters who foresaw higher price increases. Contrary to experience, inflation has been lower in the third year of this expansion. An unusually large degree of slack has remained in labor and product markets for this stage of the business cycle, keeping wage increases and profit markups moderate.

The Inflation Outlook for 1986

What about the inflation outlook for next year? I remain optimistic. Commodity prices have represented deflation. Some indexes of raw commodity prices have declined still further, some 20 percent since early last year, and some of these price declines have not yet shown in consumer prices. Moreover, there is excess capacity world wide for most raw commodities. And since many commodities are produced by lesser developed countries (LDCs) in need of dollars to service debt, production rather than prices is likely to respond to any pickup in the world economic growth rate, if one should occur. Despite some recent seasonal increases in prices for petroleum products, those prices are expected to begin falling by next spring. Overall, the prospect of a surge in commodity prices next year is moderate.

Neither is there a clear danger from labor costs. Compensation per hour has increased only 4 percent in the past year. Yes, this modest gain has outstripped productivity gains, leading to some increase in unit labor costs. I expect productivity to pick up somewhat over the next year due to improvement in corporate-management structures forced by intense foreign competition, and the increased use of computers and telecommunications equipment. Wage gains may remain moderate, resulting in a smaller advance in unit labor costs next year.

The decline in the exchange value of dollar could be an area of concern for disinflation. From its peak in February, the dollar has declined nearly 25 percent -- much of that since the "Plaza" G-5 accord in September. Based on historical relationships, this dollar depreciation could raise inflation by about 1¼ percentage points over the next three years. But I expect the effects to be somewhat smaller this time around. Profit margins are unusually wide for foreign firms that compete for market share in the United States. These firms are not going to sacrifice market shares readily, so they may absorb a large share of the dollar depreciation before raising prices.

More importantly, the Federal Reserve's sustained commitment to disinflationary monetary policy has strengthened our credibility as an inflation fighter. Surveys show that expectations of inflation over the next five years have trended downward. But expectations are notoriously fragile, so our credibility must be maintained through policies that are effective in sustaining growth without reinflation. It won't surprise you when I say that we are determined to pursue such policies!

Overall, I expect only a slight acceleration of inflation next year. Moreover, it will be due predominantly to cyclical and temporary factors. I am confident that the core rate of inflation will remain below 4 percent -- so the temporarily higher inflation need not be imbedded in market interest rates and wage contracts.

The Economic Outlook

I must admit that I am less confident about the consensus forecasts for real economic growth. Major policy decisions that will shape the economic outlook have yet been completed nor implemented. Thus there are risks to continued economic growth stemming from certain questions about the policy background for the U.S. economy next year. One can even imagine a set of policy choices that would lead to a recession next year. Indeed there is some possibility of recession even if economic policy is supportive of continued expansion.

Weighing the risks indicate that the most likely outcome, though, is for continued moderate economic growth, so necessary for long-term improvement in the health of agriculture. Agriculture has the most to gain from economic policies that guard against recession.

Before describing in more detail the scenario I think most hopeful -- and most likely -- let me first outline an alternative that weighs the downside risks for agriculture and for the general economy.

One scenario for recession could begin with an impasse in the on going efforts to reduce Federal budget deficits over a multi-year horizon and continued uncertainty about the timing and structure of tax reform. Some market makers would then see continued high interest rates accompanying massive budget deficits and deep uncertainty. Higher interest rates would push against recent progress toward realistic exchange rates. Strains on LDC debtors, thrift institutions, and agricultural lenders would be reinforced. We simply cannot tolerate a scenario involving a turndown in the U.S. economy leading to protectionist legislation, intensifing any downward spiral in world output and agricultural exports.

How can we avoid this pessimistic scenario? A good start would be agreement on a credible program to reduce U.S. government spending and thus budget deficits. In my view, such an agreement could unleash consumer and investor confidence that would lead to healthy economic growth without renewed reinflation. It would do so in part by short-circuiting the latent protectionist sentiment that is the single most dangerous threat to continued

economic growth. It would also allow a further decline in real U.S. interest rate and dollar exchange rates.

With this optimistic policy scenario, some might expect that economic growth next year will match the 4.3 percent rate reported for the third quarter. I am not that optimistic. The relatively rapid third quarter growth was built on shifting sands -- it resulted from temporary factors that do not provide a basis for sustainable growth. One major factor was the increase in consumption spending resulting from concessionary financing for auto sales. Another was the large increase in government spending. Part of this increase was due to payment for defense contracts that have been in the pipeline. There is already some evidence that increases in defense spending are winding down to levels consistent with the Congressional budget resolution for fiscal year 1986. A second source of "strength" in the third quarter was the large Commodity Credit Corporation purchases of agricultural products. You would agree that weakness in agricultural prices that led to the sale of agricultural products to the government is not a plus for the long-term economic outlook.

Now for a paradox: one aspect of government spending will actually tend to be a drag on economic growth next year! I know it is hard to imagine that, with a budget deficit near $200 billion. But remember that it is the rate of change rather than the level of government spending and budget deficits that counts in measuring the impact of fiscal policy. After increasing at a rate of over 7½ percent over the last two years, real Federal government purchases will likely increase only a little over 2 percent next year.

Indeed, the fiscal drag on the economy might be large enough to contribute to a slowdown were it not offset by another component of aggregate demand: our trade balance. After more than doubling this year, real net exports may improve somewhat next year. The substantial decline in the dollar in recent months will make U.S. goods more competitive. For those of you in America's premiere export industry, there is light at the end of the tunnel. Unfortunately, we have dug ourselves a tunnel so deep that its end will remain distant. But at least the post-Plaza U.S. economy has begun to move in the direction of greater balance and sustainability.

One factor that may prove not to be sustainable, however, is the growth of consumer debt. Household debt as a percent of disposable personal income recently has reached an all-time high of over 75 percent. Moreover, consumer debt has grown faster than consumer assets for about two years. This debt is especially burdensome because (real) consumer borrowing rates are at historically high levels. This issue obviously is a crucial one for the economic outlook.

Although personal, corporate, and governmental debt levels do raise serious questions about the sustainability of continued strength there are some factors that make the situation somewhat less worrisome. First, deregulation of financial markets has made increased interest income available, helping some to offset the burden of high interest expenses. Second, the expanding use of credit cards for convenience rather than for credit has biased measures of consumer debt upward. Third, the expansion of outstanding

consumer installment debt is consistent with historical relationships between borrowing and consumption, on the one hand, and debt repayment and the outstanding debt, on the other. Finally, consumers are coping. Delinquencies have risen only slightly so far. Despite these mitigating factors, the consumer debt situation is one that bears watching.

On a more discouraging note, the prospects for business fixed investment appear rather bleak. Surveys of business intentions for capital spending suggest that investment in new plant and equipment will show a modest gain at best in 1986. The most disturbing aspect of this outlook is not its short-run effect on aggregate demand, but its long-run effect on aggregate supply. U.S. producers can remain competitive in world markets and U.S. living standards can improve over time only if business -- including agribusiness -- finds it profitable to expand the stock of productive capital.

The Policy Setting

It is possible, of course, that passage of a tax reform bill would improve the investment outlook for next year, though subsequent year effects could be investment negative. Incentives for some types of investment, such as commercial construction, might be reduced in the short run -- and none too soon, in my view, given the massive overbuilding in office buildings. Removing the uncertainty about tax treatment for capital expenditures actually could lead to somewhat stronger investment spending in 1986.

A more important short run fiscal policy would be agreement on a multi-year plan for reducing federal budget deficits. A credible plan to reduce budget deficits, especially if slanted toward lower spending rather than higher taxes, could have a dramatic and favorable impact on consumer and investor confidence. The high real interest rates and overvalued dollar have been factors most responsible for the imbalances that threaten the sustainability of this expansion. You have felt the effects in the agricultural sector; so have those in the manufacturing and mining sectors. Trade protectionism won't help for long. Nor will sector-specific government programs. The only way to restore vigor to agriculture, manufacturing, and other depressed sectors is to bring down real interest rates and exchange rates. Farm policy hasn't caused declining prices for agricultural land and agricultural commodities; budget policy has. So the fate of agriculture is tied to the prospects for reducing deficit spending.

Monetary policy has gained credibility through its policies to reduce inflation while sustaining growth: this without rigid adherence to monetary growth targets when financial innovation, deregulation, and other changes make those targets inimical to achieving ultimate policy goals. We adapted our M1 targets this year to the emerging realities in the markets for financial assets. Doing so helped keep the expansion going, in my opinion. I believe we should adopt the same flexible approach to monetary implementation for 1986. The downside risks in the outlook reinforce the need for the Federal Reserve to implement monetary policy flexibly. In my view, our decision to rebase the M1 target range for 1985 and our subsequent decision not to react aggressively to M1 growth above our rebased target have enhanced the prospects for sustained economic growth. The aberrant behavior of monetary velocity

could have led to an abrupt end to this expansion if we had insisted on achieving our monetary growth objectives at any costs. We did not do so this year. To contribute to the management of the risks that exist in the U. S. and world economies, the Federal Reserve must continue its flexible approach to monetary policy. If you will excuse the metaphor, the stakes are too high, in the agricultural and other major sectors, to put all of our eggs in one monetary basket.

What role M1 will play in our policy implementation next year remains to be seen. Although it has slowed somewhat in recent weeks, M1 growth has been extremely high most of this year despite the sluggish economy and modest inflation. The resulting large -- and to some extent unexpected -- decline in its velocity has cast doubt on the present usefulness of M1 as a target for monetary policy. A recent study at the New York Fed concluded that velocity is likely to remain unpredictable. If so, we may continue to deemphasize M1 and rely on the eclectic approach adopted this year. Whatever our operating procedures, the Federal Reserve will make every effort to do its part to keep the economy on track through a fourth year of expansion.

Conclusion

In summary, I think the chances are reasonably good for continued economic expansion without reinflation. There are a number of downside risks, however. Many of these risks result from uncertainty about fiscal policy -- both with regard to the budget deficit and tax reform. With the fragile state of the financial system and a base of subpar economic growth for several quarters, it is not certain how long the economy can continue to cope adequately with this uncertainty. If fiscal policy issues are resolved by early next year in a way that supports balanced economic growth, prospects are reasonably good that the U.S. economy can continue expanding in 1986.

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World Agricultural Outlook Board, USDA

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Large supplies of farm commodities, both global and domestic, dominate the agricultural outlook for the end of 1985 and for 1986. Farm prices and incomes are under pressure and carryover stocks are returning to the high levels of two years ago. Slow inflation and ample supplies of farm products should continue to limit increases in retail food prices during 1986.

Bumper harvests in many world regions, especially the Soviet Union and the United States, are boosting world crop supplies for the 1985/86 season. Global supplies of coarse grains, oilseeds, and cotton are especially ample.

Crop consumption is rising worldwide, and ample supplies of feedstuffs are encouraging high feeding rates. At the same time, increased production or continued large production in some importing countries, notably the Soviet Union and China, will cause world agricultural trade in 1985/86 to decline. Intense competition from other exporters will cause further shrinkage in the U.S. share of world farm trade in 1985/86. Thus, U.S. farm exports, after dropping sharply in 1984/85 to $31 billion, are likely to drop even further in the coming year.

Near-perfect growing weather in the United States this season produced record 1985 yields of corn, sorghum, oats, rice and soybeans and total crop production was the second highest on record. With large stocks carried over from 1984, total crop supplies far exceed likely use during the 1985/86 marketing year. Livestock producers this year are turning out record amounts of meat, poultry, and milk.

Large supplies have driven down farm prices during 1985, and for 1986, crop prices will continue under intense pressure. Farmers are making heavy use of Government farm programs to temporarily take crops off the market. Even so, prices have been pushed down to, or below, loan rate levels. Price support levels established in 1985 farm legislation thus will be an important determinant for next year's commodity price levels.

Livestock prices are strengthening as earlier cutbacks in livestock breeding herds, responsible for record meat supplies, are now reducing marketings below 1984 levels. As meat production in 1986 continues under 1985 levels, livestock producers are likely to enjoy more positive returns.

Globally, world meat production should show a slight rise in 1986 as larger pork and poultry production abroad offset lower U.S. red meat output.

Farmers' income in 1985 will reflect both smaller cash receipts, because of lower prices, and lower production expenses. While 1985 cash farm income of $37 to $41 billion may be close to last year's level, net farm income may drop from last year's $34.5 billion to $25 to $29 billion in 1986.

U.S. farm income in 1986 will benefit from higher livestock prices and possibly a further reduction in production expenses. But lower crop prices and receipts may be more than offsetting, resulting in cash farm income a little below the forecast 1985 level and lower net farm income, depending on the direction and magnitude of inventory change. Crop prices in the first half of 1986 should strengthen because of heavy producer participation in Government programs and large stocks under loan. Second-half 1986 prices and marketings would be responsive to the enactment of new farm legislation.

Modest increases in inflation and ample commodity supplies are holding the increase in food prices this year to 2 to 3 percent, the lowest in several years. Given prospects for continued relatively large food supplies and moderate inflation in the economy, the increase in food prices is again likely to be modest in 1986.

The global agricultural outlook over the next several years is for continued gains in productivity, rises in product consumption, and a recovery in trade levels. The magnitude of increases in global agricultural trade will depend to a marked extent on import needs of the Soviet Union and China.

New U.S. agricultural legislation is being developed in an environment highlighted by global production gains, slow consumption growth, dampened world trade, and deteriorating U.S. export market shares. For U.S. farmers, this has meant losses in income and financial stress. For the Government, it has meant large farm programs outlays and has contributed to mounting budget deficits.

GLOBAL SETTING

Changing production levels in the United States and the Soviet Union are key factors in the global agricultural outlook for 1985/86. U.S. crop output is expanding more than 6 percent from the 1984 level in response to improved growing conditions and higher yields. The U.S. livestock industry has been adjusting inventories downward during 1985, resulting in high slaughter levels and prices substantially below a year ago. But meat production now is easing and should slip below the year-earlier level in the fourth quarter of 1985 and remain at a reduced level until the fourth quarter of 1986.

In the Soviet Union, improved yields are increasing grain output by over one-tenth. This increase, coupled with prospects for larger forage production and reduced livestock inventories, suggests a sharp cutback in Soviet grain imports in 1985/86 to about one-third below the 55 million tons of 1984/85.

Crop Production

Global output of major crops is increasing about 2 1/2 percent from last year's record, largely due to better growing conditions and higher yields for feed grains, soybeans, and cotton in the United States and for grains in the Soviet Union (fig. 1).

World coarse grain production is up substantially, responding to a sharp increase in U.S. and Soviet yields; but adverse weather is causing a significant reduction in yields and production in Eastern Europe.

Sharply higher U.S. soybean yields and the likelihood of some yield improvement in Argentina highlight prospects for significant expansion in global soybean production. Area in Brazil may decline slightly from 1984/85's high level and a little smaller crop could be harvested.

A smaller cotton crop in China, resulting from less acreage and reduced yields, is helping push down global production. With higher yields in prospect, larger U.S. and Soviet crops are indicated.

Consumption and Trade Factors

World economic growth should continue at a moderate pace in 1986 (fig. 2). In less developed countries, the pace of economic activity could improve slightly, benefiting from recent large exports to industrialized countries. Economic growth in the United States picked up in the third quarter after lagging in the first half because of liquidation of inventories and some slowing in consumer spending. Uncertainty over tax reform has also contributed to continued weakness in capital investment. However, inventory liquidation has probably run its course; and with interest rates much lower since last spring, better performance of the economy is expected to continue in the months ahead. Inflation is expected to remain at dampened levels with little demand pressure on capacity.

World meat production may show a slight increase in 1986 due to larger pork and poultry output abroad, as well as bigger U.S. poultry production (figs. 3 and 4). Also, better returns to U.S. cattle and hog producers should result in continued higher feeding rates.

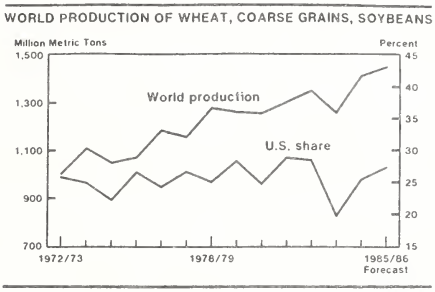


Figure 1

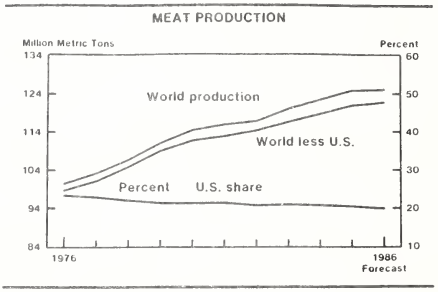


Figure 3



Figure 2

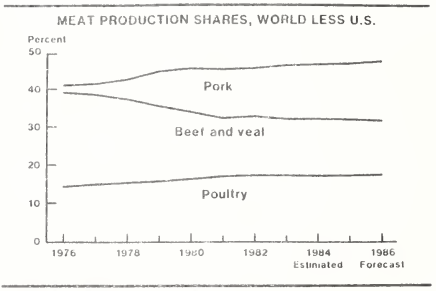


Figure 4

The dollar has weakened in 1985. Although the dollar's value remains well above the level of the early 1980's, the recent decline should mean lower prices to importers (fig. 5). Many analysts think the dollar may weaken further in 1986, particularly if the pace of economic growth abroad rises relative to U.S. growth. Also, sales are being made under the new Export Enhancement Program under which $2 billion can be spent over 3 years to improve U.S. export competitiveness by using CCC inventories to allow U.S. exporters to lower prices of certain commodities to selected markets. To date, export initiatives have been offered to seven countries for wheat or flour and to one for rice. Total offerings by late November were the equivalent of over 5 million tons of wheat. Sales of wheat under this program to date are about 1.2 million tons of wheat and wheat equivalent of flour.

Larger supplies, lower prices, continued economic growth, and a little higher livestock feed use should mean at least modest increases global in crop consumption in 1985/86 (figs. 6 and 7). World farm trade levels could slip due to continued large or expanded production in several countries, including the Soviet Union and China.

Combined global trade in wheat, coarse grains and soybeans is expected to be down about 10 percent in 1985/86 (fig. 8). With further U.S. share losses

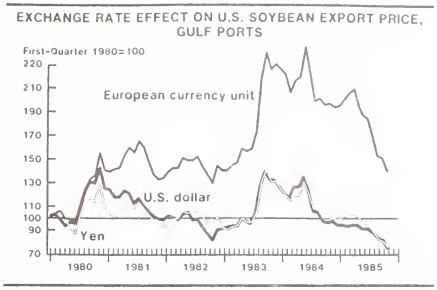


Figure 5

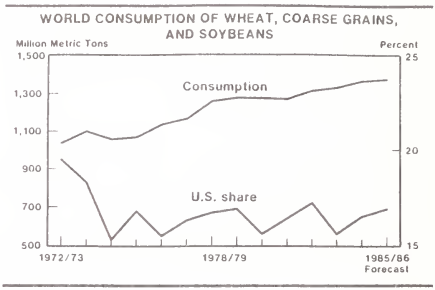


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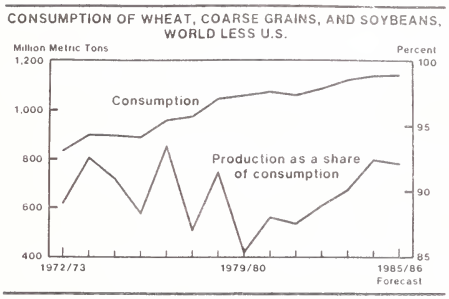


Figure 7

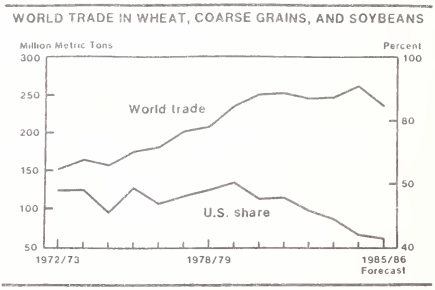


Figure 8

because of increased competition from other countries, U.S. exports will fall even more. U.S. wheat exports are expected to be down more than 15 percent. The overall volume and value of U.S. exports also are expected to fall in 1985/86 (fig. 9). Both the volume and value of U.S. agricultural exports dropped sharply in 1984/85. Volume has declined for 5 consecutive years.

U.S. agricultural imports could move slightly higher in fiscal 1985/86. With smaller exports likely, this would mean a further narrowing of the agricultural trade balance in 1985/86 from the reduced level of around $11-1/2 billion in 1984/85. This level compares with an agricultural trade surplus of $26 1/2 billion at the start of the current decade.

Crop Stocks

Global crop stocks are likely to be at record or near-record levels by the end of the 1985/86 marketing year (fig. 10). Coarse grain and soybean stocks are projected to rise over 50 percent to record levels, while a tenth more wheat is likely to be added to carryin stocks that were already at a record level.

Nearly all of the increase in global grain and soybean stocks will occur in the United States. The United States is expected to hold about 55 percent of global stocks, up from 43 percent at the beginning of 1985/86. Because of high participation in 1985 farm programs by U.S. producers, most of the increase in U.S. stocks this year may end up in government inventory.

Prices

Global commodity prices have been under pressure from large production and weak demand. This is expected to continue to be the case for crop prices in coming months, although prices could show some sensitivity to crop developments in the Southern Hemisphere, particularly for soybeans.

U.S. crop prices in 1985/86 are expected to average below year-ago levels (fig. 11). U.S. cattle and hog prices should average higher in 1986, reflecting reduced meat output, while larger broiler production could mean a little lower prices.

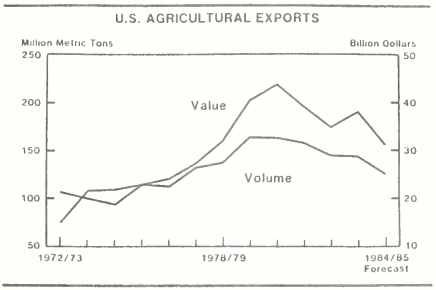


Figure 9

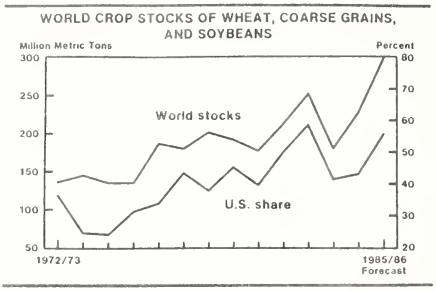


Figure 10

Commodity Overview

The outlook for large U.S. crops and weak exports points to a further building of stocks of wheat, feed grains, soybeans, and cotton. Domestic use should be supported by better livestock returns and high feeding rates in the coming months. However, except for soybeans, export markets for these crops are expected to be smaller in 1985/86.

Lagging total crop use and large supplies in 1985/86 point to considerable downward price pressure. Prices should receive some support from high program participation and heavy loan entries.

U.S. meat production reached a record high level in 1984, and 1985 probably will see that record surpassed. In 1986, total meat production is expected to decline about 1 percent (fig. 12). Beef production rose in 1984, mainly reflecting liquidation of the breeding herd. In 1985, beef production will change little from the 1984 level. Cow slaughter is off sharply, but fed beef slaughter is up. Also, record slaughter weights have helped hold beef production up this year. In 1986, beef production should decline as both fed and nonfed slaughter drop and dressed weights fall from this year's highs.

Pork production was off in 1984 and it will change little this year. The breeding inventory was down in September, and producer farrowing intentions showed that smaller pig crops were likely through this winter. Production likely will be below year-earlier levels in first half of 1986 but could be up slightly in the last half. For all of 1986, little change in output is likely. Poultry meat production has continued to increase in 1985 and this probably will be the case in 1986 as favorable returns for poultry producers continue.

Milk production is rising an estimated 5.8 percent to a record 143.2 billion pounds in 1985, boosted by renewed dairy herd expansion following the end of the diversion program and strong gains in output per cow. Assuming that

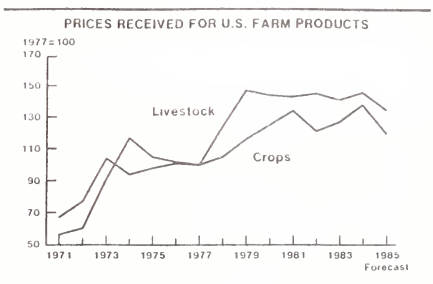


Figure 11

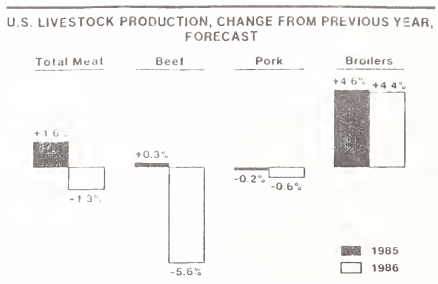


Figure 12

a diversion program is not reinstated in 1986 and that milk support prices remain at $11.60 per cwt, production could rise further next year as herds are little changed but yields continue to recover from the diversion program. However, much will depend on the dairy program adopted in 1985 farm legislation. Farm milk prices are easing this fall and for all of 1985 may average 60-80 cents below the 1984 all-milk average price of $13.45 per cwt.

Farm Income

Total net farm income in 1985 is estimated more than one-fifth below 1984's increased level of $34.5 billion (fig. 13). The lower estimate reflects large commodity supplies, reduced prices, and a reduction in the value of the livestock inventory.

Production expenses may decline moderately in 1985, reflecting lower prices and reduced use of production inputs. But gross income is falling more than production expenses, leaving less net farm income. Net cash income, with no inventory adjustment, could about match 1984's $39 billion.

The 1986 outlook is for a small decline in marketing receipts as higher cattle and hog prices are offset by lower crop prices. Production expenses may also slip, but not as much as marketing receipts, so net cash income could be slightly lower. Net farm income could be down more than cash income, if inventories are drawn down. Policy changes and weather developments will influence the outcome.

Program Participation

Producers removed about 34 million acres from crop production in 1985, up from 1984's 27 million (fig. 14). Participation for each crop increased from 1984 levels. Harvested acreage of 15 major crops plus acreage put to soil conserving uses totaled about 294 million acres in 1985, second only to the 300 million acres in 1983. The approximately 260 million acres for harvest in 1985 are producing crops well in excess of demand levels.

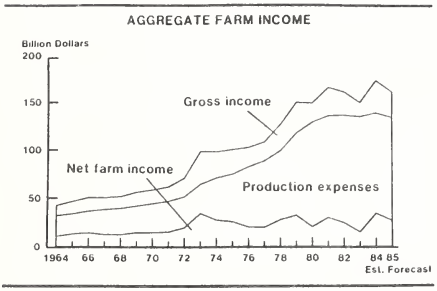


Figure 13

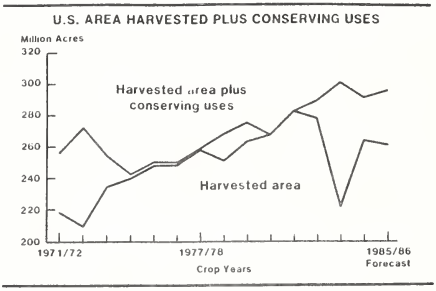


Figure 14

Net Outlays

Net outlays for price support programs increased sharply in fiscal 1985 to around $16.8 billion, second only to the high of $18.9 billion in 1983 (fig. 15). Loans made from the 1984 crop increased sharply, as did direct cash Government payments, particularly feed grain deficiency payments. Fiscal year 1986 outlays likely will be another year of heavy outlays with increased commodity entries into the loan and large deficiency payments.

Food Prices

Continued slow inflation in the economy and relatively large food supplies are holding down the 1985 increase in food prices to 2 to 3 percent (fig. 16). So far in 1985, price gains have been closer to the lower end of the range, although there may be some pressure from tightening red meat supplies in the months ahead. Beef supplies are expected to show the sharpest declines.

The outlook for 1986 is for continued moderate inflation in the economy and relatively large food supplies, with meat supplies down only about 1 percent because of larger poultry output. The increase in food prices is likely to be modest in 1986.

LONGER TERM PRODUCTION AND TRADE PROSPECTS

The global capacity to produce agricultural products is outpacing market demand so far in the 1980's. Commodity output has been spurred by productivity gains, while demand has been dampened by the economic turndown and slow recovery.

The outlook for the next several years is for continued productivity gains as present and new technology is adopted. Demand for agricultural products should improve with economic growth, although the pace of demand growth is unlikely to match the 1970's.

Productivity Potential

There is much potential for productivity increases over the next 5 to 10 years. Technological advances will mean greater animal product production and increased plant yields. But productivity gains are not 5 to 10 years away; they are being achieved now.

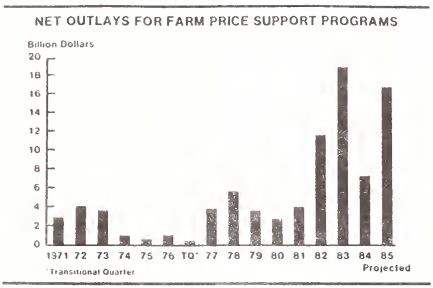


Figure 15

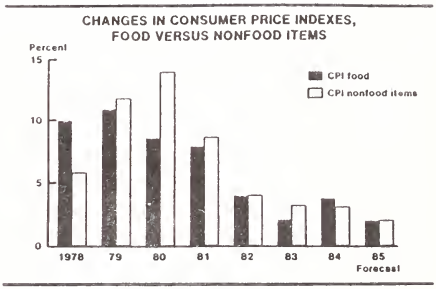


Figure 16

For major crops, for example, U.S. yields have gained over a tenth in the past decade, more than double the increase in crop acreage (fig. 17). In 1985, U.S. yields broke records and posted additional gains. Other countries average yields rose nearly one-fifth in the past 10 years.

Crop yield increases can be achieved, even without major technological breakthroughs, by switches to higher yielding varieties and adoption of improved management practices. Wheat provides a good example, where producers in some countries are switching to higher yielding soft wheat varieties.

Wheat yields in the United Kingdom, for example, average over 2 1/2 times the U.S. average, and are 70 percent above 10 years ago. In the United States, yields are averaging nearly one-fourth higher than in 1976. The availability of hybrid varieties and new advances in technology add to potential productivity gains for wheat, as well as for other crops.

Demand Prospects

Global demand for agricultural products is expected to expand over the next several years, encouraged by Government policies and stimulated by continued gains in economic activity, population growth and large commodity supplies. The key question is whether the demand growth will be met by domestic production or through trade.

Two countries, the Soviet Union and China, have had a major impact on world commodity trade levels in recent years; and this likely will be the case in the next several years.

Soviet grain imports have been at record levels in the early 1980's and net imports have accounted for about one-fifth of domestic use, up from around 5 percent in the early 1970's (fig. 18). The share of Soviet imports from the United States fell sharply in 1980 but has recovered somewhat recently.

Soviet feed use of grain has remained large since 1976/77--in most years around 122 million tons of all grains with wheat generally equaling about 35 percent and coarse grains 65 percent.

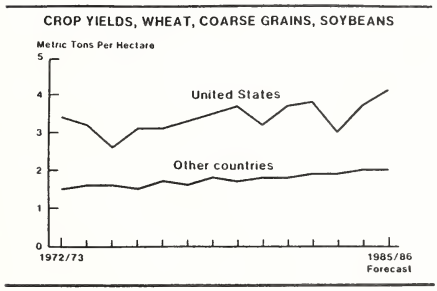


Figure 17

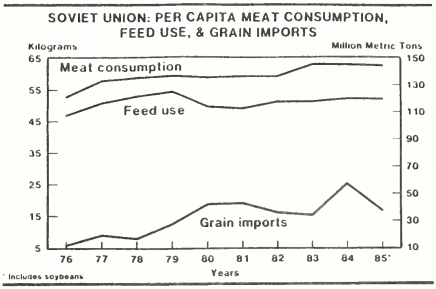


Figure 18

Soviet imports of oilseeds and products have been highly variable. Stagnant oilseed production growth and an acceleration in meal use for livestock feeding in the late 1970's and early 1980's sparked a strong rise in Soviet soybean meal and soybean imports. However, technical problems in the handling and distribution of soybean meal in the USSR resulted in a sharp cutback in the past 2 years from the peak imports of 1982/83. Large global supplies and competitive prices likely would stimulate future Soviet meal use and imports.

Per capita meat consumption in the Soviet Union has been trending upward. Meat production has been increasing; but in some years, the Soviets have supplemented their domestic production with large imports of meat. In 1984, total meat production was up only slightly, while imports declined almost one-fifth, resulting in almost no change in per capita consumption. Meat production is showing a slow growth in 1985, but a larger increase is likely in 1986. Meat imports are down and likely will drop again in 1986 if production rises as expected.

China's level of grain imports and the share of domestic use from imports have trended downward in recent years (fig. 19). Increased production and greater self-
sufficiency for both grains and cotton have led to reduced imports.

In the late 1970's through 1982/83, China sharply increased corn imports; but in recent years, imports have almost stopped. Indeed, China is expected to export about 3.5 million tons of corn in 1985/86. Huge production increases in recent years have caused a buildup in China's corn surplus which cannot be absorbed domestically due to inadequate inter-provincial transportation and a limited feed industry. However, the Government has issued an ambitious plan to increase domestic production of mixed and compound feed from 10-12 million tons in 1984 to 50 million tons by 1990 and over 100 million tons at the turn of the century. This may indicate that increased production of compound feed in large plants in major cities will be based on imported corn, but much of the increased production of simple mixed feed may be in rural areas relying on using local grain surpluses. The potential for large corn imports exists as current per capita meat consumption is relatively low.

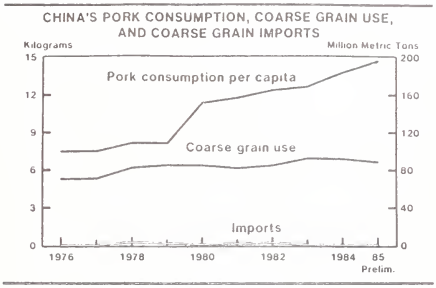


Figure 19

Per capita pork consumption in China has shown an upward trend over the past several years. China is the largest pork producing country; but per capita consumption is far below levels for European countries, the United States, and Canada. China exports some pork. Production is expected to continue its upward trend this year and again in 1986.

LEGISLATIVE DEVELOPMENTS

The U.S. Congress is now finalizing new agricultural legislation in an environment of continued imbalance between commodity supplies, enlarged by productivity gains, and weak growth in world demand and trade. Central concerns are the financial stress facing farmers, continued losses in farm exports, and the need to reduce the budget deficit. Solving these problems has required a hard look at both traditional farm policies and trade policies.

Provisions of the bills considered by the Congress reflect two different philosophies. One holds that a more market-oriented and less Government-run farm policy is needed to make farm exports more competitive and return prosperity to agriculture. This philosophy is behind the Administration's farm bill proposals. However, some hold that more, not less, intervention is required to guarantee high farm prices.

THE OUTLOOK FOR U.S. AGRICULTURAL TRADE

Daniel G. Amstutz, U.S. Department of Agriculture

1986 Agricultural Outlook Conference
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The volume of U.S. agricultural exports is forecast at 120.5 million tons in FY 1986 versus 125.5 million tons in FY 1985.

The economic problems impacting on agricultural exports have been well documented:

--The budget deficit;
--The trade deficit;
--Growing external debt;
--Relatively high real interest rates;
--A dollar exchange value that will remain substantially above the lows as this decade began.

The problems are still with us.

Most projections show that real growth in the developed countries will be in the 2.5 to 3.0 percent range in 1986; growth in the developing countries is pegged at 3 to 4 percent. This is not an economic scenario that would provide a lot of bounce to farm product exports. Nonetheless the recent weakening in the dollar creates hopeful signs, particularly for high value products.

The number of countries involved in trading processed and consumer-ready products, both as importers and exporters, and the range of products traded are substantially greater than in the bulk product sector. Furthermore, year-to-year fluctuations in volume and value of bulk product trade have been several times greater than the swings experienced in processed-product trade.

Moreover, the recent downward trend in the value of the dollar, along with lower prices for some commodities, may provide an opportunity for expanding exports of some items.

The trade-weighted exchange index for agricultural commodities has declined about a fifth since February. In addition, lower prices have further reduced the amount foreign buyers have paid for some commodities since the beginning of the year. For example, German buyers are now paying about 10.5 deutsch marks per bushel for U.S. soybeans. This is not only sharply below the level of last year, but it is also close to the low level at the beginning of the decade.

For commodities not under rigid price support programs, the changing international monetary situation could indeed be a positive force in the export picture during 1986 and beyond.

It has already enhanced the price competitive position of such high-value and consumer-ready U.S. products as tree nuts, seeds, and fresh and dried fruits.

As a result, we are starting to see a positive trend in our exports of these items. However, the competitive position of the bulk commodities--which are generally supported by loan rates above the going world prices--is expected to continue to deteriorate significantly next year.

How Competitive Are We?

At present, the U.S. rice price is double that of our competitors. The wheat price is 30 percent higher; cotton, 20 percent; corn, 15 percent; and soybeans, 7 percent.

Obviously, these commodities are not competitive--and that is a problem the farm sector can do something about.

Many analysts put the blame on the strength of the U.S. dollar and not without some good reasons. Their argument is particularly convincing, for example, in the case of U.S. soybean sales in Europe last year. Inflation in Europe was comparable to that in the United States and imports of soybeans were not affected by duties. In that situation, the real cost to importers rose 35 percent because of the dollar appreciation.

However, that case does not support generalizing the impact of the strong dollar to encompass the entire U.S. export problem. The dollar is not always the culprit. In the case of wheat exports, the appreciation of the dollar has been less important to importers--particularly developing countries--because inflation in these importing countries has more than offset changes in the exchange rate. Consequently, their real costs for imported wheat have actually fallen by about 17 percent since 1979. However, because of the U.S. wheat loan rate, export competitors are still able to sell below U.S. offer prices.

Clearly, the dollar's impact on U.S. exports varies depending on circumstances in different markets. The strength of the dollar is only a part of the problem. Agriculture cannot count on changes in the exchange rates to completely turn around the export outlook.

The biggest source of U.S. uncompetitiveness is an inflexible domestic support program which makes it impossible for U.S. prices to adjust to world market conditions.

It is easy to see why. The U.S. price support programs set a floor under domestic and world market prices for wheat, coarse grains, soybeans, cotton and rice. Ordinarily, when prices fall to the U.S. loan rate, sufficient quantities are withdrawn from the export market to support world prices at the U.S. loan rate. The United States absorbs excess stocks by taking grain under loan.

When stocks become excessive, acreage reduction programs are implemented. Thus the United States reduces world market price risks and bears the burden of stock and production adjustments, all at no cost to producers or taxpayers in other countries.

At present the markets are so weak, and surplus stocks outside the United States so large, that competitor supplies have driven effective world prices well below U.S. loan rates, thus making the United States uncompetitive.

Since about 1982, U.S. support prices have provided a protective price umbrella under which U.S. competitors have expanded their production and their exports. The appreciation in the value of the U.S. dollar has simply exacerbated the problem.

The Impact of Foreign Trade Policies

The policies of other countries in the conduct of trade also affect competitive position of the United States in world markets.

Among competitors, the policies of the European Community (EC) have had the most significant impact on reducing U.S. exports as well as world prices in a number of commodity areas. High support prices without production controls generate surpluses which are exported with subsidies, changing the EC from a net importer to a net exporter.

In general, the export subsidy policies of the European Community have distorted trade and propelled the Community to the front rank in the export of several major commodities.

Many countries use state-trading entities or marketing boards to control and monopolize their farm industries and their purchases abroad, effectively standing in the way of free trade. Some maintain high tariffs on imports. Others have complex labeling requirements. In short, there are few countries that are not using trade barriers of one sort or another.

A Free Market Orientation

As we think about policies and programs to remedy the U.S. export slump, the agricultural community might do well, from time to time, to remind itself of its philosophical underpinnings. Any solutions that foster long-term growth for agriculture are going to have to take into account the economic realities of the marketplace.

No trade policy will work if U.S. programs and policies contradict economic reality. World agriculture is currently characterized by over-capacity in production. By providing incentives for production greater than the market dictates, U.S. programs contribute directly to the oversupply problem in this country as well as others because of the price protection U.S. programs provide other, competing producing countries.

Because of unrealistically high production incentives, many U.S. farm products are not priced competitively in world markets. Unless the United States changes its programs, many segments of U.S. agriculture will continue to be priced out of global markets.

There is also another, equally important non-trade policy area that directly impacts on the ability of the United States to compete in international markets. Currently, real interest rates and the level at which the U.S. dollar is trading relative to other currencies--despite some recent declines--combine to make for high costs for U.S. exporters vis-a-vis their competitors in other countries. A principal reason for the high costs in these areas, which impact negatively on U.S. export potential, is the continuing need to borrow abroad to finance the U.S. budget deficit. Until federal expenditures are brought into a closer balance with revenues, U.S. exporters will be saddled with either high real interest rate costs or a too strong dollar, or both.

Legislation for a Stronger U.S. Agriculture

To help clear these hurdles, U.S. agriculture is going to need appropriate legislation to foster trade and allow it to be more competitive in international markets.

This is a crucially important period in the legislative process. We hope the product that emerges from conference will move us away from insular and self-defeating policy toward freer trade and growth in agriculture. Clearly, in a country where one-third of the harvest moves into foreign markets and exports provide more than one-fifth of farm marketing income, no domestic farm legislation can afford to overlook its impact on trade.

During the hectic legislative process, and in spite of heavy protectionist and isolationist pressures, the Reagan Administration is holding to the view of agricultural trade that has prevailed from its first day in office. It can be stated simply: Market forces, not governments, should determine the movement of agricultural products in international trade.

That view was embodied in the Administration's farm bill proposal of last February. It is also the philosophy that drives the U.S. conduct of trade and its approach to negotiations and consultations with its trading partners.

International Cooperation Needed

The United States cannot carry out the free trade philosophy alone--it needs the support of its international trading partners, and they have not always been agreeable.

The slow progress in the General Agreement on Tariffs and Trade (GATT) is a good example. The United States supports GATT and continues to push hard for changes in international trading rules despite adamant resistance to consensus. Certainly it is not possible to work through all the problems overnight. Yet there is an increasing urgency for negotiators to begin to make more progress.

When all the problems facing major industrial nations are considered, it is no small undertaking for trade to surface as the number one issue in a recent U.S. public opinion poll.

That can only mean one thing--there are a lot of frustrated people calling for something to be done to change the situation.

In some circles, there are even mumblings about trade wars. That is the last thing the international marketplace needs right now. Aggression of that sort would be particularly devastating to agriculture.

Yet more and more, the Administration is feeling pressure to use measures that the United States would not otherwise choose to defend its markets.

At one time or another every nation in the international trading system--and the United States is no exception--has chosen short-term expedient measures to protect their own agricultural interests. The United States is at a point now where it must adopt policies that foster growth and economic health over the long-term. Such policies must remove government from the picture and allow market forces to provide the direction if it is to have an agricultural system capable of meeting the challenges of the future.

SPEECH BY BARON HEEREMAN,
PRESIDENT OF THE
INTERNATIONAL FEDERATION OF AGRICULTURAL PRODUCERS,
TO THE U.S. OUTLOOK CONFERENCE

3RD DECEMBER 1985



I AM VERY GLAD TO HAVE THIS OPPORTUNITY TO PARTICIPATE IN THIS 1986 OUTLOOK CONFERENCE. IT IS OBVIOUSLY ESSENTIAL THAT THE FARMERS' VOICE IS HEARD AND FULLY TAKEN INTO ACCOUNT WHEN THE AGRICULTURAL SITUATION IS ASSESSED AND THE OUTLOOK FOR THE FUTURE IS DISCUSSED OR SHOULD ONE PERHAPS BETTER SAY GUESSED AT?

POLITICIANS AND FARMERS MUST WORK TOGETHER. THE ONE TO TAKE THE DECISIONS, THE OTHER HAVING TO LIVE WITH THE RESULTS. AS I AM BOTH A POLITICIAN AND A FARM LEADER I FIND A DIALOGUE BETWEEN THE TWO IS NOT TOO DIFFICULT.

I AM HERE TODAY AS PRESIDENT OF THE INTERNATIONAL FEDERATION OF AGRICULTURAL PRODUCERS, THE ONLY WORLDWIDE BODY OF NATIONAL LEVEL FARMERS' ORGANIZATIONS AND AGRICULTURAL CO-OPERATIVES. WITH 60 MEMBER ORGANIZATIONS IN OVER 50 COUNTRIES WE COVER MOST OF THE IMPORTANT PRODUCING COUNTRIES. THE FEDERATION THEREFORE PROVIDES AN IDEAL FORUM WHERE FARM LEADERS WITH VERY DIFFERENT BACKGROUNDS AND OUTLOOKS CAN MEET, CAN DISCUSS THEIR PROBLEMS, CAN AGREE, CAN DIFFER, AND CAN AGREE TO DIFFER. WE MAINTAIN THIS FORUM THROUGH REGULAR MEETINGS OF OUR COMMODITY GROUPS AND STANDING COMMITTEES ON AGRICULTURAL CO-OPERATIVES AND AGRICULTURE IN DEVELOPING COUNTRIES. THE WORLD FARMERS CONGRESS TAKES PLACE EVERY TWO YEARS.

WE HAVE CREATED AN ATMOSPHERE OF RESPECT AND UNDERSTANDING AMONG FARM LEADERS ALTHOUGH COMMON POSITION CANNOT ALWAYS BE REACHED. HOWEVER, IT IS VITAL THAT ALL VIEWS ARE WELL REPRESENTED AND IT IS ESSENTIAL THAT THE U.S. FARMERS' ORGANIZATIONS FULLY PARTICIPATE IN IFAP DISCUSSIONS.

IT IS SOMETIMES SAID THAT FARMERS NEVER KNOW WHAT THEY WANT BUT ARE ALWAYS WILLING TO FIGHT FOR IT. A GOOD JOKE, BUT NOT ENTIRELY ACCURATE. FARMERS EVERYWHERE WANT: A FAIR RETURN FOR THEIR LABOUR AND CAPITAL. THAT IS WHAT WE ARE ALL FIGHTING FOR: THE STRATEGY MAY DIFFER BUT THE AIM IS THE SAME. THE PROBLEM IS KNOWING HOW TO ACHIEVE IT.

FARMERS IN MOST OF OUR MEMBER COUNTRIES ARE FACING FIVE SERIOUS PROBLEMS:

- A SEVERE COST/PRICE SQUEEZE
- SERIOUS DEBT PROBLEMS
- HIGH REAL INTEREST RATES
- DECLINING OR STAGNANT COMMODITY PRICES ESPECIALLY ON OVERSUPPLIED INTERNATIONAL MARKETS
- LESS SUPPORT FOR AGRICULTURE AS GOVERNMENTS CUT BACK ON SPENDING TO REDUCE BUDGET DEFICITS.

I WOULD LIKE TO GIVE YOU A FEW EXAMPLES.

LET ME START WITH AUSTRALIA, NOT BECAUSE OF THE ALPHABETICAL ORDER BUT BECAUSE IT IS TYPICAL OF THOSE COUNTRIES WHERE GOVERNMENT GIVES ONLY MINIMAL FINANCIAL SUPPORT TO AGRICULTURE. FARMERS IN AUSTRALIA ARE FULLY EXPOSED TO INTERNATIONAL MARKET FORCES FOR A SUBSTANTIAL PART OF THEIR PRODUCTION ESPECIALLY SUGAR, BEEF AND GRAIN. THE SITUATION IN AUSTRALIA CAN ONLY BE DESCRIBED AS GRIM. RISING COSTS, HIGH INTEREST RATES -17 PER CENT - DEPRESSED WORLD COMMODITY PRICES ARE THE MAIN REASON FOR THE FARM CRISIS. IN THE LAST FIVE YEARS, THE RATIO OF PRICES RECEIVED AND PAID BY FARMERS HAS FALLEN BY 20 PER CENT. MOREOVER, FARMERS AND ESPECIALLY LIVESTOCK NUMBERS HAVE NOT RECOVERED FROM THE DISASTROUS DROUGHT IN 1983.

THE FARM INCOME OF 6,500 AUSTRALIAN DOLLARS PER PERSON IS LESS THAN HALF OF THE AVERAGE FOR OTHER WORKERS. A DEPLORABLE SITUATION.

FOR SIMILAR REASONS, NEW ZEALAND FARMERS ARE NOT MUCH BETTER OFF. OWING TO THE 1983 DROUGHT, FARM INCOMES WERE THE LOWEST FOR TEN YEARS WITH THE 1984/85 SITUATION BEING THE SECOND LOWEST.

NEARER HERE, IN CANADA, THE FARM SITUATION HAS BEEN DETERIORATING TOO. NEARLY 20 PER CENT OF FARMERS ARE FACING A VERY SEVERE DEBT CRISIS. IN 1984 A POOR GRAIN CROP REDUCED FARMERS INCOME AND EXPORTS OF GRAIN WILL FALL FROM 31 MILLION TONS TO ONLY 21 MILLION TONS.

IN EUROPE TOO THE FARM INCOME SITUATION IS FAR FROM BEING SATISFACTORY. IN THE EEC AS A WHOLE INCOME HAS FALLEN BY OVER 2 PER CENT ANNUALLY BETWEEN 1975 AND 1983. IN THE LAST TEN YEARS FARM INCOME HAS SLIPPED BEHIND BY 40 PER CENT AS COMPARED WITH AVERAGE INDUSTRIAL WAGES. IN SWEDEN, FARMERS TOOK TO THE STREETS IN 1984, PROTESTING ABOUT FALLING INCOME. EVERYWHERE, LAND PRICES ARE DECREASING, THUS REDUCING THE AMOUNT WHICH BANKS WILL LEND. INTEREST RATES REMAIN HIGH: UP TO 17 PER CENT IN FINLAND, NEARLY 15 PER CENT IN DENMARK AND AROUND 13 PER CENT IN FRANCE AND THE U.K. YOUNG PEOPLE ARE RELUCTANT TO TAKE UP FARMING OR FIND IT IMPOSSIBLE TO FINANCE THEIR ENTRY INTO THEIR OWN ENTERPRISES.

I COULD PROVIDE YOU WITH OTHER FACTS AND FIGURES, BUT I AM SURE THESE EXAMPLES AMPLY ILLUSTRATE THE SITUATION. I MUST ALSO STRESS THAT IT IS NOT THE INEFFICIENT OR BAD FARMERS WHO ARE IN FINANCIAL TROUBLE. JUST THE REVERSE. IT IS MAINLY THE YOUNG, PROGRESSIVE AND ENTERPRISING PRODUCER WHO BORROWED IN ORDER TO INTRODUCE THE MOST MODERN FARMING TECHNIQUES AND WHO NOW FACES BANKRUPTCY BECAUSE OF HIGH INTEREST RATES AND TIGHTENING OF CREDIT.

I HAVE NOT MENTIONED THE CRISIS FACING U.S. FARMERS AS THESE ARE WELL KNOWN TO YOU. WE REALISE THE SERIOUSNESS OF THE SITUATION AND SHARE YOUR FARMERS' CONCERN. NOR I HAVE SPOKEN OF THE DRAMATIC SITUATION FACING FARMERS IN MANY PARTS OF THE THIRD WORLD WHERE A FALL IN FARM INCOME OFTEN MEANS THE DIFFERENCE BETWEEN HAVING TWO MEALS PER DAY OR ONE OR EVEN NONE.

ONE SOMETIMES FORGETS THAT THE PRESENT SITUATION DID NOT ARISE BY ACCIDENT. IT IS LARGELY THE RESULT OF DELIBERATE GOVERNMENT POLICIES AND ACTIONS, AS WELL AS THE INABILITY OF GOVERNMENTS TO CO-OPERATE INTERNATIONALLY. FOOD EMERGENCY MEASURES OF THE TWO WORLD WARS AND THE MEASURES TAKEN IN RESPONSE TO THE WORLD FOOD CRISES OF THE 1970S CHANGED THE FACE OF AGRICULTURE. THE PRESENT HIGH-INPUT HIGH-OUTPUT TECHNOLOGY IS THE RESULT.

MORE EXPENSIVE SOPHISTICATED MACHINERY, MORE FERTILIZER AND CHEMICALS MORE SPECIALIZED BUILDINGS AND EQUIPMENT, MORE MONEY SPENT ON LIVESTOCK BREEDING MEANT FINANCIAL RESOURCES WELL BEYOND MOST FARMERS MEANS. THE FARM IS NO LONGER SELF-CONTAINED. INCREASINGLY SPECIALIZED AND EXPERT SERVICES ARE NECESSARY. SALESMEN OF FARM INPUTS ARE REGULAR VISITORS AND THE BANK MANAGER OFTEN HAS A DECISIVE VOICE IN FARM DECISION MAKING. IT ALL CREATED A HIGHLY EFFICIENT FARMING SYSTEM WITH DRAMATIC YIELD INCREASES PER HECTARE AND LIVESTOCK UNIT RESULTING IN THE PRESENT INCREASED PRODUCTION. PRODUCTION WHICH IS IN EXCESS OF EFFECTIVE DEMAND.

THEY SAY THAT NOTHING SUCCEEDS LIKE SUCCESS. IN THE FARMERS CASE NOTHING HAS BEEN MORE DESTRUCTIVE THAN HIS SUCCESS. HE HAS BECOME LIKE THE SORCERER'S APPRENTICE.

WHERE DO WE GO FROM HERE? I AM AFRAID, THERE IS A WIDE DIVERGENCE OF OPINIONS ON WHAT SHOULD BE DONE. NEVERTHELESS, I WOULD LIKE TO EMPHASISE SOME SOLUTIONS ACCEPTABLE TO MANY OF IFAP'S MEMBERS.

AGRICULTURE CANNOT BE TREATED IN ISOLATION. THE FARMING SITUATION REFLECTS THE GENERAL ECONOMIC CONDITIONS BOTH NATIONALLY AND INTERNATIONALLY. IF MORE FAVOURABLE ECONOMIC CONDITIONS PREVAILED TODAY WE WOULD NOT HAVE THE PRESENT INTERNATIONAL COMMODITY TRADE CRISIS. ONE WOULD ALSO HEAR FEWER COMPLAINTS ABOUT EXPORT SUBSIDIES AND UNFAIR TRADING PRACTICES.

IN 1983 WORLD AGRICULTURAL COMMODITY EXPORT EARNINGS REACHED 273 BILLION DOLLARS WHICH IS 10 PER CENT BELOW THE 1980 PEAK. IN CONSTANT DOLLARS THE GLOBAL VALUE OF AGRICULTURAL COMMODITIES ROSE BY 4.1 PER CENT PER YEAR BETWEEN 1971 AND 1980. IF THIS RATE HAD BEEN MAINTAINED 47 BILLION DOLLARS WOULD HAVE BEEN ADDED TO THE 1983 FIGURE. EVEN RELATIVELY SMALL CHANGES IN DEMAND HAVE A MARKED INFLUENCE ON THE WORLD MARKET AND ON PRODUCER PRICES. TRADE EXPANSION COULD THEREFORE SUBSTANTIALLY IMPROVE THE PRESENT CRITICAL INTERNATIONAL MARKET SITUATION.

HIGH INTEREST RATES INCREASE PRODUCTION COSTS, AGGRAVATE THE DEBT PROBLEM, REDUCE PURCHASING POWER AND SLOW DOWN ECONOMIC EXPANSION. HIGH INTEREST RATES ALSO BADLY AFFECT THE DEVELOPING COUNTRIES WHICH ARE POTENTIALLY IMPORTANT TRADING PARTNERS. THEIR TOTAL DEBT HAS GROWN ALARMINGLY TO NEARLY 900 BILLION DOLLARS. FOR EVERY ONE PER CENT LOWER INTEREST RATE PAYABLE BY THEM NINE BILLION DOLLARS WOULD BE AVAILABLE FOR MORE PRODUCTIVE USES. IT WOULD ENABLE THEM TO IMPORT GOODS AND SERVICES INCLUDING FOOD. THIS SORT OF SUM WOULD MAKE A SUBSTANTIAL DIFFERENCE TO INTERNATIONAL TRADE.

NOT ONLY DO THESE COUNTRIES IMPORT LESS BUT BECAUSE OF THEIR DEBT PROBLEM THEY ARE DESPERATE TO EXPORT MORE. AN AVERAGE OF OVER 20 PER CENT OF THEIR EXPORT EARNING NOW GO TO DEBT SERVICING. AND THIS IS WHY COUNTRIES SUCH AS BRAZIL, ARGENTINE AND OTHERS EXPORT SOYA BEANS, WHEAT, SUGAR, ETHANOL OR ORANGE JUICE BY ALL AND EVERY MEANS AND SO FURTHER DEPRESS ALREADY OVERSUPPLIED MARKETS.

CONCERTED ACTION BY GOVERNMENTS, INCLUDING THE U.S. GOVERNMENT, WOULD LOWER INTEREST RATES. THE SAME APPLIES TO THE LEVEL AND STABILITY OF EXCHANGE RATES WHICH IN RECENT YEARS HAVE HAD AND ARE STILL HAVING DESTABILIZING EFFECTS ON TRADE AND ON THE RELATIVE COMPETITIVE POSITION OF COUNTRIES AND AGRICULTURAL COMMODITIES.

CO-OPERATION BETWEEN GOVERNMENTS IS NOT ONLY REQUIRED ON THE ECONOMIC FRONT. TRADE CONFLICTS ARE INCREASINGLY CENTRED ON AGRICULTURE PROBLEMS, AND HERE TOO INTERNATIONAL CO-OPERATION IS ESSENTIAL TO PREVENT THE PRESENT CRISIS GETTING WORSE. TOP PRIORITY MUST BE GIVEN TO AVOIDING A TRADE WAR WHICH NO ONE COULD WIN AND IN WHICH FARMERS WOULD BE THE BIGGEST LOSERS.

THERE IS NO WAY ONE COUNTRY, HOWEVER BIG, OR EVEN A GROUP OF COUNTRIES, CAN GO IT ALONE AND WIN THE BATTLE IN THE LONG TERM. PAST EXPERIENCE HAS SHOWN THIS, FOR EXAMPLE WITH WHEAT. INDEPENDENT ACTION AND MEASURES IN CONFLICT WITH THOSE TAKEN BY OTHER COUNTRIES WILL AGGRAVATE THE SITUATION. IFAP FARM LEADERS FROM THE MAJOR EXPORTING COUNTRIES OF TEMPERATE COMMODITIES, WHEN WE MET IN GENEVA LAST JULY, AGREED THAT IT IS ESSENTIAL FOR GOVERNMENTS AND INTERNATIONAL ORGANIZATIONS TO TACKLE DOMESTIC AGRICULTURAL ADJUSTMENT PROBLEMS AND TRADE ISSUES IN A CONSTRUCTIVE AND CO-ORDINATED MANNER.

WE, IN IFAP AGREE THAT INTERNATIONAL AGRICULTURE TRADE SHOULD, AS FAR AS POSSIBLE, BE CONDUCTED WITHIN THE FRAMEWORK OF GATT. IT IS IMPORTANT THAT AGRICULTURE IS INCLUDED IN THE NEXT ROUND OF TRADE NEGOTIATION DUE TO START IN 1986. AGRICULTURE MUST BE ACCORDED ITS FULL ROLE IN GATT, IN KEEPING WITH: FUNDAMENTAL IMPORTANCE OF FOOD PRODUCTION IN ALL COUNTRIES.

GATT RULES AND PROCEDURES MUST BE DEFINED MORE CLEARLY AND ALL RULES MUST BE BACKED BY EFFECTIVE SETTLEMENT PROCEDURES. AT PRESENT, THESE ARE FAR TOO SLOW AND CUMBERSOME. CONTRACTING PARTIES MUST ALSO ACCEPT AND ACT ON PANEL FINDINGS. IFAP RECOGNIZES GATT'S TASK OF SEEKING LIBERALIZATION OF INTERNATIONAL TRADE BUT ACKNOWLEDGES THAT IT IS UNREALISTIC TO EXPECT MAJOR CHANGES IN DOMESTIC AGRICULTURAL POLICIES ALL OVER THE WORLD OVER NIGHT. THEREFORE, THE ACCENT SHOULD BE PLACED IN THE FIRST INSTANCE ON A MORE ORDERLY INTERNATIONAL MARKETING.

OBVIOUSLY A BETTER MARKET BALANCE MUST ALSO BE CREATED. THE PRESENT LARGE COMMODITY STOCKS MUST BE REDUCED AND THE PRESENT TREND OF PRODUCTION EXCEEDING EFFECTIVE DEMAND REVERSED. FARMERS IN MANY COUNTRIES DOUBT WHETHER THIS CAN BE ACHIEVED ONLY BY REDUCING PRICES. SMALL REDUCTIONS IN PRICE DO NOT NECESSARILY REDUCE PRODUCTION AND VERY DRASTIC DECREASES HAVE DISASTROUS RESULTS ON THE FARMING ECONOMY. THE DILEMMA OF FARMERS FACED BY PRICE CHANGES IS ILLUSTRATED BY THE FARMER WHO WAS ONCE ASKED WHAT HE WOULD DO IF PRICES WERE REDUCED. "OH, HE REPLIED, OF COURSE, I WOULD HAVE TO INCREASE MY PRODUCTION." "AND HOW WOULD YOU RE-ACT TO HIGHER PRICES?" "WELL, SIR, THEN YOU WOULD REALLY SEE ME PRODUCE."

FARM LEADERS BELIEVE THAT PROMOTION TO INCREASE THE DEMAND FOR AGRICULTURAL COMMODITY SHOULD BE GIVEN PRIORITY. ALTERNATIVE POTENTIAL MARKET OUTLETS HAVE NOT BEEN FULLY EXPLORED. NEW OR INCREASED UTILIZATION OF AGRICULTURAL PRODUCE FOR ETHANOL PRODUCTION, BIOTECHNOLOGY OR OTHER INDUSTRIAL USES COULD BE DEVELOPED. RECENT TECHNOLOGICAL PROGRESS INCLUDING GENETIC ENGINEERING AND BIOTECHNOLOGY PROMISE A GREATLY IMPROVED FUTURE AND JOINT ACTION BY FARMERS, INDUSTRY AND GOVERNMENT COULD ACHIEVE A REAL BREAKTHROUGH.

IN CONCLUSION LET ME COME BACK TO THE FARMER'S CASE. WE BELIEVE THAT FOR MANY GOOD AND VALID REASONS HE HAS A SPECIAL CASE, AND THEREFORE SPECIFIC MEASURES ARE JUSTIFIED.

FIRST, UNLIKE FACTORIES YOU CANNOT JUST SWITCH MACHINERY ON AND OFF TO ADJUST PRODUCTION TO MARKET DEMANDS. IT TAKES TIME AND CARE TO MAKE ADJUSTMENTS.

SECOND, FARMING IS THE LIFE-BLOOD OF MANY REGIONS, PARTICULARLY IN LESS FAVOURED AREAS. THEREFORE, WHEN FARMS CLOSE DOWN IT HAS A COMPOUNDING EFFECT ON THE MORALE AND ECONOMY OF THE WHOLE COMMUNITY INCLUDING AGRI-BUSINESS AND SUPPORTING SERVICES.

THIRD, FARMING BY ITS VERY NATURE IS NOT MOBILE. FIXED TO THE LAND, BUILDINGS AND EQUIPMENT IT CANNOT BE MOVED OR TRANSFERED TO SOME OTHER PLACE.

FOURTH, ONCE THE FARMING AND RURAL INFRASTRUCTURE IS DAMAGED OR DESTROYED, IT WILL BE VERY DIFFICULT AND COSTLY TO REBUILD IT. AND YET THE TIME WILL SURELY COME WHEN AGRICULTURAL PRODUCTION WILL HAVE TO BE RAISED TO MEET THE INCREASED DEMAND OF BOTH PEOPLE AND INDUSTRY.

FIFTH, FARMERS ARE THE GUARDIANS, OFTEN UNPAID, OF THE NATURAL ENVIRONMENT AND THE COUNTRY SIDE. DRASTIC CHANGES COULD HAVE DEVASTATING ADVERSE EFFECTS.

SIXTH CONCERNS FOOD SECURITY. PEOPLE CAN DO WITHOUT MANY THINGS BUT CERTAINLY NOT WITHOUT FOOD. STOCKS OF FOOD ARE AT PRESENT VERY LARGE. BUT THE 300 MILLION TONS OF GRAIN IN STOCK COMPRISE ONLY 18 PER CENT OF WORLD CONSUMPTION WHICH IS REGARDED THE LEVEL OF SECURITY REQUIRED TO MEET UNEXPECTED ADVERSE HARVESTS IN MAJOR CONSUMING COUNTRIES. AN UNCONTROLLED OR EXCESSIVE REDUCTION IN PRODUCTION OR IN STOCKS COULD WELL UNDERMINE NATIONAL AND INTERNATIONAL FOOD SECURITY WITH DISASTROUS CONSEQUENCES. FOOD SECURITY IS THEREFORE A NATIONAL AS WELL AS AN INTERNATIONAL RESPONSIBILITY THE COST OF WHICH MUST BE BORNE BY GOVERNMENTS AND NOT BY FARMERS.

IF WE TAKE THESE POINTS TOGETHER WITH WHAT I MENTIONED EARLIER, FARMERS HAVE A GOOD CASE TO JUSTIFY THEIR DEMANDS FOR CONTINUED GOVERNMENT SUPPORT FOR AGRICULTURE.

MANY COUNTRIES ARE PRESENTLY REVIEWING THEIR AGRICULTURAL POLICIES AND ARE INTRODUCING RE-STRUCTURING MEASURES. YOUR U.S. FARM BILL, THE EEC POLICY REVIEW, MARKET RE-ORIENTATION MEASURES IN AUSTRALIA AND NEW ZEALAND AS WELL AS THE FORTHCOMING GATT NEGOTIATIONS ALL PROVIDE AN OPPORTUNITY TO SOLVE SOME OF THE PRESENT SERIOUS AGRICULTURAL AND TRADE PROBLEMS.

WE MUST NOT MISS THIS OPPORTUNITY. BUT TO SEIZE IT GOVERNMENTS WILL HAVE TO WORK TOGETHER. THE WORLD HAS BECOME A VERY SMALL PLACE. IF YOU IN THE U.S. SNEEZE, I WILL CATCH A COLD TOO. HOWEVER, IF YOU SMILE, I AM HAPPY. IN IFAP WE TRY TO MAINTAIN A CONSTANT DIALOGUE THAT WILL PREVENT CONFRONTATION. AND I AM CONVINCED IT IS THE ONLY WAY. THANK YOU.

THE STATE OF AGRICULTURE
Robert L. Thompson
Assistant Secretary for Economics,
U.S. Department of Agriculture
Session 3, Tuesday, December 3, 1985

Good afternoon. It is a pleasure to appear before you today. As you know, this is my first Outlook Conference as an assistant secretary. I must begin by saying I wish there was more to tell you!

Usually when USDA officials come before this gathering, it is with some certainty about many predictable aspects of agriculture in the year ahead. The weather normally takes the rap for creating uncertainty. This year, the forces of nature seem to be the least of the unknowns facing agriculture. This year, however, the only certainty seems to lie in the very uncertainties facing us this week.

In setting the stage for Outlook '86, this morning, Secretary Block clearly indicated that no time in the history of American agriculture was probably as significant as these current days. Assuredly, few Outlook Conferences ever have been held in an atmosphere of such tension or change. So much of a critical nature faces our decisionmakers. Even while this Outlook Conference goes on, the Senate and the House will meet in conference to attempt to define a final farm bill. Details on farm credit legislation also may be hammered out in the next few days. Other issues vital to agriculture such as trade, tax reform, and reduction of the federal budget deficit will be debated in the next few days, weeks and months as well.

Today's State of Agriculture

My assigned topic today is the state of agriculture. Just what is this state in early December 1985? Is it all gloom and doom? Is the entire focus on burdensome stocks and declining commodity prices? Do all the signs point to nothing but struggle and pain for the farm sector in the years ahead? I think not.

Other speakers this week will address the fundamental facts surrounding the state of agriculture in the excellent array of papers planned for the next 3 days. The history of these fundamentals is hardly news. American agriculture saw tremendous--if abnormal--rates of growth in the "boom" years of the 1970's.

Soaring farm exports grew five-fold to a record $44 billion in 1981. Farmers planted fence-row to fence-row, and bankers gladly helped finance the expansion. Cropland in production grew by 55 million acres. The annual level of capital expenditures nearly doubled from the early 1970's to the peak of the boom in 1977-81.

Rising farm incomes paid for some of this investment but the bulk was financed by borrowing. Clear proof of this is the fact that in 1984, the largest cash cost of farm production was the $22 billion paid in interest by farmers. Land values increased by more than 13 percent each year in the 1970's. A farm bill was written in 1981 against this backdrop of tremendous optimism.

But almost overnight, world recession slowed demand growth, and the incredible gains in agricultural trade were abruptly halted. Aggressive expansion in production capacity and debt from the 1970's left farmers unprotected from the sweeping economic changes of the 1980's. Many of the macroeconomic, weather, and policy forces that strengthened markets in the 1970's now worked in reverse.

Further, the appreciating dollar, combined with the rigid price supports legislated in 1981, effectively priced many U.S. products out of world markets and encouraged expansion by our competitors. Tremendous optimism quickly changed to overwhelming despair.

Last week after a speech in the upper Midwest, a reporter challenged me with the oft-heard allegation that this Administration fails to comprehend the depth of the farm crisis; that Washington is filled with heartless leaders; that no-one cares.

You--my colleagues--gathered here today know better. Yet I wonder if even we, the social scientists and agribusiness leaders, have not succumbed to a defeatist, victimized posture? Are we missing opportunities to deal with the farm situation--now, not tomorrow; on our own, not at the timetable of any of the number of bureaucracies involved? Further, are we so immersed in a crisis mentality that we fail to recognize the signs of hope now emanating in the trade sector?

Signals of Hope

The history-making move toward lower loan rates in the proposed farm legislation and the recent declines in the value of the dollar are glimmers of light at the end of a very dark tunnel. These two critical factors--lower loan rates and lower dollar value--mean a return to competitiveness for U.S. agriculture for the first time in 5 years. At the same time, target prices in the proposed farm legislation would be maintained at current levels over the next year. This would smooth the transition to market-oriented policy. Let us not forget that real prosperity for agriculture will not come from producing for government stocks, but only from expanding markets. Lower loan rates and the cheaper dollar are a beginning toward expanding markets and prosperity for American agriculture.

Yet we hear little about this. What I honestly believe to be a well-intentioned media still is feeding us daily breakfast fare of woe. Have we become so adept at dissecting the critical problems of American

agriculture that any sort of remedy through our own actions eludes us? I don't pretend to have the answers. But I do believe progress can only come by seeking answers, not by hunting new questions or new reasons to blame official Washington.

Expect a Turnaround

Today I would propose that we start looking toward--start expecting--a turnaround. No matter what the outcome of legislative debate or other official Washington actions, several conditions affecting today's state of agriculture can be changed by the agricultural community itself--by us.

I identify five areas of potential change affecting the state of agriculture. They are hardly new; three relate to financial practices, two to shifts in traditional attitudes. Wise selection among these alternatives can contribute to a more vigorous state of agriculture in the 1990's. The first potential changes is: base lending on the agricultural rate of return. The current farm financial situation illustrates the vulnerability of farmers to the price swings intrinsic to our dependence on international markets. The agricultural community can influence the amount of debt in the sector. Lending practices of the farm credit system and others need to be based on reasonable expectations of returns in agricultural use. More of the capital in agriculture needs to be owner's equity; less to come from borrowing. Farmers are recognizing this and are moving toward increasing acreage by rental of farmland instead of ownership.

The second change is move away from risk transfer programs. Since the Depression, the government has been pressured to shift risks from producers to the public through risk transfer programs such as price supports and subsized crop insurance. These programs were initiated to benefit farmers, but just the opposite has been true. They have lead to such a buildup of government stocks that downward pressure has been exerted on returns to farm resources. Such programs contribute to the bidding up of land, machinery, and other input prices. Cutting back risk transfer programs in the short run will reduce farm and agribusiness profits, especially in climatically riskier parts of the country. But to do otherwise means continued supply increases and depressed prices. The farm legislation pending in the House-Senate Conference is a beginning, with reduction in loan rates. But this movement toward more market orientation must continue in the years ahead.

The third change is have fewer tax loopholes for farming. In the long run, tax breaks attract resources into farming, the benefits get bid into the prices of assets, and aggressive "tax farmers" get the lion's share of benefits. Meanwhile, other producers who are less adept--or less interested in manipulating their activities to benefit from the tax code--suffer indirect effects of production expansion.

The fourth change is to target subsidies to small and mid-sized full-time family farms. There always has been reluctance in the farm community to target benefits according to need. But in 1984, only about 24 percent of direct payments went to financially stressed farmers. Only about 20 percent of total U.S. farm production is directly supported by direct government payments. In fact, only abut 47 percent of financially stressed farmers participated in any commodity program in 1984. Only 17 percent of the payments went to farms that relied primarily on farm income for their livelihood. Direct government payments as currently distributed -- based on volume of production -- can do little to benefit those in agriculture that are financially stressed and in danger of going out of business. Targeting of benefits is the only approach which will address the problem of financial stress. Targeting also would encourage large farm operators to diversify and be less expansionary.

Aid in development of the LDCs. The less-developed countries are tomorrow's customers for U.S. farm products, if their incomes can be increased. Many people are concerned about creating competition for U.S. farm exports through foreign assistance; the alternative is even less attractive. Many LDCs are overwhelmingly agricultural and only an agricultural transformation will alleviate their poverty. Aggressive export expansion of necessity must include aggressive developmental assistance to the developing world.

U.S. Agriculture: the Potential Winner

There is no guarantee that the increases in LDC food and fiber demands will outpace the increases in their food and fiber production. But the odds are good that they will. If so, U.S. agriculture is the potential winner if we have competitive cost and pricing policies.

Changes in these three potential areas--credit, risk transfer, and taxes--are difficult. But if agriculture is to prosper again, debt in the sector must be reduced, not increased; asset values must adjust to prospective commodity market conditions, not be artificially inflated with easy credit, or risk transfers to the public, or tax subsidies. Some resources--land, capital, and labor--must leave, not stay in agriculture. The trend toward more part-time farmers will continue.

Further, bold action by the U.S. agricultural community in targeting farm programs and aiding agriculture in less developed countries also can mean major strides toward returned prosperity.

The by-word to all of these suggestions is courage. Courage to change. Courage to take some unpopular stands within the agricultural community which will, in turn, give our legislators the courage to take the steps needed in the political arena. Yes, it will be complex, burdensome, and unpopular at times. But truly, it is time for U.S. agriculture to take the reins and start doing once again instead of waiting with downcast eyes to be done for or, worse, done unto.

We come from a self-reliant heritage. About 80 percent of us here today probably have recent roots in the soil of agricultural America. Yet it is time for change. We have appropriately recognized and grieved over our losses. Today, I submit that it is time to look toward the future with some of the hope which characterized the history of our farming ancestors--hope and the courage to make the changes essential to the future prosperty of American agriculture.

Thank you.

FINANCIAL PROSPECTS FOR THE FARM SECTOR
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I. Introduction

The financial effects of dynamic agricultural and economy-wide market forces at play in the 1970's set the stage for the economic difficulties facing farmers in the mid-1980's. Compared to the relative stability in farm incomes and finances in the 1960's, the decade of the 1970's was characterized by unprecedented increases in farm exports, incomes, asset values and debt. Catalysts for this economic growth were favorable exchange rates for importers of U.S. farm products, increased purchases by centrally planned economies and the general inflationary boom in commodity markets. Early warning signals for the agricultural recession of the 1980's were the increased variability/instability of markets, a near 25 percent decline in the fixed asset turnover ratio (gross sales divided by fixed assets), and a doubling of the interest expense to gross sales ratio. While the increased vulnerability of the farm sector was not widely recognized, producers that substantially expanded real asset inventories in the late 70's, producers with high levels of debt, and/or producers of commodities particularly sensitive to export demand were generally in a weakened position at the close of the decade.

The 1980's have been characterized by record or near-record crop production, a strong dollar which has resulted in lower exports, and high real interest rates that have become a burden in a heavily indebted, deflating agricultural environment. These forces have resulted in declining asset and equity values in agriculture and severe financial stress. While the main causes of these problems are found in events of the 1970's, and farmers' aggressive use of debt in response to these events, these problems are also rooted in the growing need to compete for capital and product sales in an international market place. The associated adjustments are proving traumatic for farmers and lenders.

The inherent instabilities and uncertainties of agriculture play a large role in sector financial performance. In many respects the financial adjustments in agriculture resemble those of the 1930's. Yet there are notable differences. One is the increasing vulnerability of agriculture not only to economic fluctuations at the national level, but also to developments in the world marketplace.

This paper begins with a historic perspective from which to view current U.S. agricultural financial performance. Aggregate farm financial trends are analyzed and then reviewed with respect to distributional issues in the sector. Relationships among farm income, assets and financial

performance are explored. Since current income from assets has continued above pre-1970's levels, those farmers encountering financial stress tend to have large debt service requirements relative to earnings, or produce commodities now experiencing price declines. Examining these issues the second section disaggregates to identify farms in stress. The last section presents financial prospects for 1985-86 and assesses economic and financial conditions for the remainder of the 1980's.

II. Financial Performance in Perspective

Trends in Aggregate Farm Income

Since 1960, net farm income has experienced three distinct patterns: slowly increasing incomes in the $10-$15 billion range during the 1960's, sharply higher incomes in the $20-$35 billion range in the early and mid-70's, and extremely variable incomes ranging from $15-$35 billion in the last 8-10 years (table 1). When adjusted for inflation, approximately the same pattern is followed until about 1976 when deflated income shifts markedly lower than nominal income (while remaining highly variable).

Table 1--Farm sector income, 1970-84 1/

Year	Cash receipts	Government payments	Production expenses	Net cash income		Net farm income		Off-farm	
				Nominal	Deflated	Nominal	Deflated	Nominal	Deflated
				Billion dollars					
1970	50.5	3.7	44.5	18.1	19.7	14.4	15.7	17.6	19.3
1971	52.7	3.1	47.1	17.7	18.5	15.0	15.6	19.1	19.9
1972	61.1	4.0	51.7	22.7	22.7	19.5	19.5	21.3	21.3
1973	86.9	2.6	64.6	35.2	33.3	34.4	32.6	24.7	23.4
1974	92.4	.5	71.0	34.2	29.7	27.3	23.7	28.1	24.4
1975	88.9	.8	75.0	29.0	23.0	25.5	20.3	23.9	19.0
1976	95.4	.7	82.7	29.4	22.2	20.2	15.2	26.7	20.2
1977	96.2	1.8	88.9	27.3	19.5	19.9	14.2	26.1	18.6
1978	112.2	3.0	101.0	34.6	23.0	27.4	18.4	29.7	19.8
1979	131.5	1.4	119.0	37.0	22.6	31.7	19.4	33.8	20.7
1980	139.8	1.3	129.4	37.2	20.9	20.2	11.3	35.1	19.7
1981	142.1	1.9	136.1	35.8	18.3	29.8	15.3	36.9	18.8
1982	142.9	3.5	136.9	38.3	18.5	24.6	11.9	37.9	18.3
1983	136.3	9.3	135.6	38.3	17.8	15.0	7.0	38.8	18.0
1984	141.8	8.4	139.5	39.2	17.6	34.5	15.5	40.0	17.9

1/ Deflated dollars are 1972 dollars.

Net cash income also followed three distinct patterns since 1960: slowly rising in nominal terms from $12 to $18 billion by the early 1970's, increasing rapidly during the food crisis boom years before leveling off at less than $30 billion during 1975-77, and increasing and stabilizing in the $35-$40 billion range since about 1979. Net cash income has also been much less variable than net farm income. This is due to the large inventory swings that have characterized the net farm income measure since the early 1970's. When adjusted for inflation, the years since 1981 show little effect. The relative stability of nominal and deflated cash incomes in recent years due to lower levels of inflation constitutes one of the most encouraging current trends in farm income.

Farm Income by Commodity

While aggregate cash incomes appear to have stabilized, individual commodities have experienced widely varying returns. Net cash income for cash grain farms decreased from $10.4 to $8.1 billion between 1983 and 1984 before rising to $8.7 billion in 1985. Aggregate cash income from cotton declined in both 1983 and 1984 before increasing moderately in 1985. On the other hand, aggregate cash income from vegetables increased moderately in both 1983 and 1984 before falling $.4 billion in 1984.

In the livestock sector, dairy experienced gradual reductions in aggregate net cash incomes from 1982 to 1984 before increasing 18 percent in 1985. Cash income from cattle and hogs fell by about $.6 billion in 1983, rebounded in 1984 and fell $.3 billion in 1985. Net cash income from poultry and egg enterprises more than doubled in 1984.

On a per farm basis, net cash income increased 9 percent for cash grains, rebounded 17 percent for cotton, declined 9 percent vegetables and increased about 8 percent for the all crop category in 1985. Net cash income on a per farm basis in 1985 declined 4 percent to about $4,800 for meat animals, increased 21 percent to about $38,000 for dairy, declined 11 percent to about $78,000 for poultry, and increased about 4 percent overall for livestock farms to about $12,000.

Farm Income by Sales Class

The distribution of farm income by sales class shows several important trends occurring in the 1980's. Net farm income before inventory adjustments appears to be shifting slowly to mid-size commercial farms with sales between $100,000 and $500,000. Net income for these farmers increased from less than $12 billion in 1982 to about $13.5 billion in 1984. On the other hand there is a slight declining trend in income for farms with sales exceeding $500,000 as well as for small family farms and part-time farm operations. The financial difficulties of the 1980's have apparently affected the relative share of earnings of the largest and smallest farms more than was the case during the 1960's and 1970's.

The distribution of farms and income by sales classes for 1984 is shown in table 2. There were about 300,000 commercial size family farms with sales between $100,000 and $500,000. Farms in this group received nearly 42 percent of farm cash receipts and about 54 percent of government payments. Average household income for this group of farmers was more than $55,000, including nearly $11,000 of nonfarm income. The 70 percent of farms with 1984 sales less than $40,000 experienced an average of $1,387 in farm losses; however, this part-time class of farmers received an average of more than $20,000 in off-farm income, and a proportion of government payments (11.3 percent) approximately equal to their share of cash receipts (10 percent). On the other hand the 1.3 percent of farms with sales exceeding $500,000 received nearly one-third of all cash receipts and more than 12 percent of government payments. Off-farm income for this class of farms averaged more than $14,000 in 1984 and total income averaged more than $437,000. The information in table 2 indicates that small farms depend primarily on nonfarm income sources, and that the small and large farm groups each receive about one-eighth of government payments. Family size commercial farms received proportionately more government payments than their share of farm sales, with more than three-fourths of government payments received by family size units (small and large).

Table 2--Distribution of Farms and Income by Value of Agricultural Sales Classes, 1984

Value of agricultural sales class	1984 farms		Share of cash receipts 1/	Share of government farm payments	Average household Income 2/		
	Number (1,000)	Percent	Percent	Percent	Farm	Nonfarm	Total
					Dollars		
Less than $40,000	1,638	70.3	10.0	11.3	-1,387	20,021	18,634
$40,000-99,999	353	15.2	15.6	22.2	6,073	9,719	15,792
$100,000 - 499,999	306	13.2	41.7	54.1	44,500	10,902	55,402
$500,000 and over	31	1.3	32.7	12.4	423,063	14,438	437,501
U.S.	2,328	100.0	100.0	100.0	11,471	17,188	28,659

1/ Includes net CCC loans.
2/ Before inventory adjustment.

Source: Economic Indicators of the Farm Sector: National Financial Summary, 1984.

Trends in Returns to Sector Assets and Equity

The relationship between farm income and farm assets is a key measure for gauging farm financial performance. Income flows in agriculture sustain investment in farm machinery, land, buildings and livestock as well as provide a return to labor and management. Returns to farm assets, the profits from ownership and control of farm assets, underlies the market-determined prices of farm assets (table 3).

Table 3--Farm income, returns, assets, and debts of operators and landlords, selected years

Item	1960	1970	1975	1980	1981	1982	1983	1984
Gross farm income (excluding operator dwelling)	36.7	55.8	95.4	138.7	153.5	148.8	138.7	162.3
Returns to operator	10.1	12.8	22.6	14.1	22.7	17.5	8.6	28.4
Returns to farm assets and operator's labor and management	13.2	18.4	33.3	35.5	47.6	44.2	33.7	54.1
Returns to farm assets	5.4	11.0	23.9	23.9	34.0	31.7	22.5	41.2
Returns to equity	4.1	7.8	17.9	8.3	14.9	10.7	1.9	20.9
Equity in farm assets (market basis) (beginning of year)	150.5	221.6	366.3	762.9	832.8	816.3	774.1	754.0
Returns as percentage of equity	2.7	3.5	4.9	1.1	1.8	1.3	0.2	2.8
Total farm assets (beginning of year)	172.9	270.5	442.2	918.1	1003.2	1005.2	997.8	956.5
Residual income to assets as percentage of asset value (percent)	3.1	4.1	5.4	2.6	3.4	3.2	2.3	4.3

Asset and equity values, dominated by changes in land prices, have closely followed changes in income from assets. With current income generally trending upward from the 60's through the late 70's, and with expectations of continued current income growth, the total returns (current income plus real capital gains) to assets and equity also grew. This growth in total return to farm equity (and assets) was largely supported by real capital gains on farm real estate in the 70's.

In the middle and late 70's, many farmers made substantial investments in land and other capital assets expecting the boom to continue. Thus farm sector debt, equity and assets continued to grow, and the aggregate debt/asset ratio remained relatively stable. But since the early 80's, current income has stagnated. Aggregate farm sector asset values have also declined substantially since 1982. But farm debt has declined only slightly. Thus

the sector debt/asset ratio has turned upward, and farm equity has fallen by nearly $200 billion since peaking in 1981. Current return to farm assets has been relatively stable, but instead of accruing capital gains as they did in the 1970's, farmers are now experiencing significant real capital losses.

Flow of Funds to the Farm Sector

Farms with large and growing debt service commitments are those most affected by stagnation in income growth. This can be seen by examining a cash flow measure of farm sector profitability (table 4). Although cash flow to the farm sector before interest payments has stabilized at a higher level than in the 70's, cash flow after interest payments (and including net borrowing), that is, funds available for investment, consumption and savings has declined. This trend is projected to continue as long as current income stagnates (declining after adjustment for inflation rates) and real interest rates remain high. In the near term, farm operators need positive cash flow to service their debt commitments. In the longer term, there is a need to restore their debt-servicing requirements to levels consistent with current income expectations. The restructuring process in agricultural land markets will likely continue during the 1985-86 period.

Table 4--Flow of funds to the farm sector, selected years

	1960	1970	1975	1980	1981	1982	1983	1984
	Billions of dollars							
Gross cash income 1/ (including net CCC loans)	35.0	54.8	90.7	143.3	146.5	149.0	148.1	153.3
Less: Wages to hired labor and other operating expenses excluding interest 2/	20.1	31.5	51.5	85.3	86.2	84.7	85.2	89.0
Equals: Cash flow before interest payments	14.9	23.3	39.2	58.0	60.3	64.3	62.9	64.3
Less: Interest paid	1.27	3.20	6.1	15.64	19.12	20.98	20.56	20.27
Equals: Cash flow after interest payments	13.6	20.1	33.1	42.4	41.2	43.3	42.3	44.0
Plus: Net borrowing (excluding CCC loans)	1.1	2.4	9.1	15.3	15.6	7.3	3.5	-1.5
Equals: Funds available for investment, consumption and savings	14.7	22.5	42.2	57.7	56.8	50.6	45.8	42.5

1/ Excludes inventory adjustment.
2/ Includes intermediate product expenses and business taxes.

III. Farms in Stress

Financial Position of Individual Farmers and Ranchers

Although knowledge of the levels of income and the balance sheet is important for understanding the farm sector's financial performance over time, these aggregate statistics do not provide the basis for assessing the strength of individual farmer's or rancher's financial positions. To assess the financial health of a farm business three characteristics of the business are often examined: solvency, liquidity, and profitability. Each of these financial measures provides information necessary to understand the financial position of the farm: solvency measures refer to the value of assets in relation to the value of liabilities and provides insight into the collateral security of farm loans; liquidity refers to the capacity of the farm business to generate enough cash to meet its financial obligations; and profitability in general refers to the relationship between costs and returns. It is necessary to have coordinated measures of solvency and profitability from individual businesses before any assessment can be made of the proportion of farmers encountering difficulty or the amount of debt held by various groups.

Because the incidence of financial problems among farmers depends largely on indebtedness, the distribution of operators and their debt by the ratio of debts-to-assets (degree of solvency) indicates an upper bound on the proportion of operators that are in difficulty and how much of the total farm operator debt they owe. The debt-to-asset ratio is a balance sheet measure obtained by dividing total liabilities by total assets. Using this solvency criteria, survey data for January 1, 1985 indicate that about 320,000 farms had ratios in excess of 40 percent--a generally accepted cut-off that identifies where farmers begin to encounter problems in meeting financial commitments given current earnings. More than three-fifths of debt of farm operators was held by farmers with debt to asset ratios over 40 percent. Operators with sales of more than $100,000 and debt/asset ratios above 70 percent owed about two-thirds of total operator debt. Thus, the debt problems in agriculture are very much related to commercial size farms as these operators tend to use relatively more debt per dollar of farm assets. The debt-to-asset ratio measures relative indebtedness of the farm business and reflects the amount of risk to which lenders have exposed themselves in lending to farmers and ranchers.

But, by themselves, indicators of solvency do not provide information about the income or debt service capacity of farm operators. Mean debt-to-asset ratios vary considerably both by type of farm and by level of earnings within a given farm type. Many highly-leveraged farms have adequate returns to service their debt loads. A fourth of the operators with debts in excess of assets were able to meet estimated debt service commitments as well as current operating expenses in 1984. Meanwhile, some low-leveraged farms experienced liquidity or cash flow difficulties due to the type of crops or livestock produced, level of production, prices, or expenses.

To assess the incidence of farm financial difficulties at the beginning of the year, two financial measures were used: high debt-to-asset ratios and the occurence of negative cash flows. Farms with a low debt-to-asset ratio and positive cash flow were generally considered to be financially stable: farms with a high debt-to-asset ratio and negative cash flow could be vulnerable to both solvency and liquidity problems. Nationally, nearly 19 percent of farm operators had debt-to-asset ratios exceeding 40 percent. Slightly over half, 50.3 percent, of operators had negative cash flows (net cash farm and nonfarm income less estimated family living expenditures and principal repayment). Nearly 13 percent of operators had debt-to-asset ratios greater than 40 percent and a negative cash flow. These farm operators also held nearly half of the total debt held by operators.

Financial problems are most frequent on farms with sales of $40,000 to $500,000. General livestock, cash grain, and dairy farmers are the most common farm types experiencing problems. More than 60 percent of the financially stressed farmers are located in the Corn Belt, Lake States, and Northern Plains. Of all insolvent (debts exceed assets) operations, 55 percent are located here as well. However, many commercial size farmers in the Delta, Southeast and West are also experiencing financial stress.

The number of operators estimated to have cash flow difficulties depends heavily on the assumed level of income ($12,950) allowed as a family living allowance and the level of principal repayment estimated at 8.6 percent of outstanding debt. Depending upon the financial circumstances of any individual farm, these assumptions could result in either over or under-estimating cash flow, and, consequently, the proportion of farm operators in difficulty. Recent analyses which focused on farm operator's return on assets, return on equity, amount of equity, and debt-to-asset ratios did not impose an assumption about family living or debt repayment levels. This work still indicated that approximately 10 percent of operators and 23 percent of debt were "vulnerable" while another 7 percent of operators and 10 percent of debt were stressed. 1/ Although giving different estimates of the proportion of operators and debt in financial difficulty, the combined focus on profitability and solvency ratios did not alter the conclusion that at least a tenth of farm operators were in a difficult financial position entering the 1985 calendar year and that operator debt is fairly concentrated among the most vulnerable operators.

1/ For definition and results of the analysis see, "Farm Financial Experience and Agricultural Banking Experience," Emanuel Melichar, Subcommittee on Economic Stabilization of the Committee on Banking, Finance, and Urban Affairs, U.S. House of Representatives, Oct. 23, 1985.

IV. Situation in 1985 and Prospects for 1986

General economic conditions in the farm sector have not been favorable for most farmers this past year and current market conditions indicate little substantial improvement can be expected during the next several months.

Prices received by farmers for all commodities fell by about 10 percent in 1985, the worst annual decline since 1953. Prices received for crops fell 13 percent as near-record crop output and lack-luster foreign and domestic demand combined to create huge carryover stocks, which, in the absence of any fundamentally new farm legislation or market development, will provide downward pressure on market prices through the first-half of 1986. With crop prices at or below loan rates this fall and winter, large (if not record) quantities of grains, soybeans, and cotton will continue to go under CCC loan. Should farm prices continue to hover near the loan rates next spring and summer, many of these commodity loans will be forfeited to the Government, leaving the CCC with inventories similar to those which prompted the creation of the PIK program early in 1983.

The large increase in U.S. and foreign agricultural production in the past two years has not been matched by growth in farm product consumption. World economic growth in 1985 was slower than the robust 4.2 percent real Gross National Product (GNP) rise experienced in 1984. The slower growth in 1985 was heavily weighted by the industrial countries, such as the U.S., which will have real GNP growth about a third less than the strong 1984 output. The value of the dollar also continued strong in 1985 (although declining by about 20 percent against several major currencies) and was one of the factors in the less-than-expected export volume of 1985. The value of U.S. agricultural exports will likely be off by about a sixth in calendar 1985 due mostly to lower export prices received. Preliminary indications suggest a further decline in the year ahead.

Cash Receipts

Total cash receipts from 1985 marketings of farm products are expected to fall 1 - 3 percent from last year's $141.8 billion. Crop cash receipts are forecast to remain near the 1984 total as a 13 percent drop in prices received outweighs a rise in marketing volume caused in part by the 6-percent rise in crop production this year. Declines in receipts for oil crops, rice, fruits, and vegetables will outweigh increases in feed grains and miscellaneous crops such as greenhouse and nursery items. Livestock cash receipts are expected to fall, dropping 3 - 5 percent from the strong $72.7 billion of 1984. A 7-percent drop in prices received will outweigh a small increase in production. With the exception of milk, turkeys, and lamb, receipts will decline for most livestock categories--poultry will show the largest decline, dropping a tenth as egg and broiler prices fall heavily.

In the year ahead, total cash receipts are expected to decline slightly (up to 4 percent) with crops accounting for all of the decline. Livestock receipts may rise slightly as small gains in poultry and dairy receipts, due to increased volume of marketings, will combine with higher hog prices and receipts. Cattle receipts in 1986 are anticipated to remain near those of 1985 as sharply lower production is offset by stronger cattle prices. The decline in 1986 crop receipts will likely come during the second half of the year when continued low prices (caused in part by the huge stocks overhanging the market) combine with the expected smaller output from the 1986 crop to leave cash receipts during the second half below those of 1985. Because of current uncertainty concerning the impending farm bill and weather and market conditions next year, forecasts for the second-half of 1986 are very tentative. However, based on a continuation of current programs and average weather, receipts would be expected to decline for nearly all commodities, but especially for wheat, cotton, and soybeans.

Government Payments

As in the past few years, Government payments will provide a significant contribution (around 5 percent) to farmers' gross cash income, in both 1985 and 1986. Direct Government payments (mainly deficiency, diversion, storage, and conservation programs) in 1985 are expected to total about $8 billion, similar to the $8.4 billion of 1984. However, in contrast to 1984 when $4.5 billion of the total consisted of entitlements from the PIK program, nearly all of 1985's payments will consist of cash disbursals. The payment forecast for 1986 is based on current legislation and assumes paid land diversion (accounting for a quarter of the total expected payments) for the major program crops as well as deficiency payments based on 1985 target and loan rate limits. Based on program and commodity price assumptions, direct payments in 1986 could be as large as 1985's. Wheat and corn farms will probably continue to receive a significant share of total payments in 1986.

Production Expenses

Total farm production expenses are expected to fall by 3 to 5 percent in 1985 from last year's $139.5 billion, as the prices paid by farmers for all inputs falls by 1 percent (the first decline since 1955) and overall input use declines. Cash expenses are also expected to fall by 3 - 5 percent from the $114.1 billion of 1984. All major expense categories are forecast to exhibit declines in 1985. Farm origin inputs may fall 4 to 6 percent due to lower feed grain prices and reduced shipment of feeder cattle. Manufactured inputs such as fertilizer are expected to drop 2 to 4 percent due to lower prices paid and reduced use. Interest charges are projected to drop the most, perhaps 5 to 7 percent, reflecting lower interest rates on outstanding debt as well as reduced debt outstanding caused in part by a sustained effort by farmers to pay down their debt outstanding.

Expenses are again expected to decline in 1986, but not by as much as this year. Prices paid by farmers may remain near their 1985 levels while total input use again declines. Much of the decline in input use next year depends on acres planted which in turn will partly depend on the farm program yet to be announced. However, it is likely that interest expenses will continue to fall, as market interest rates remain near those of 1985 and farmers continue to reduce their debt exposure, operating on internally generated cash in place of new loans wherever possible.

Income Indicators

Net farm income (or income from production) measures the income generated from a given calendar year's production, price levels, and government program participation. In 1985, net farm income is expected to range from $25 to $29 billion, compared with $34.5 billion in 1984. In recent years net farm income has been very volatile because of extremes in weather patterns and crop output. This year gross farm income will be $10 to $14 billion less than in 1984 because of a smaller accumulation of crop inventories, lower cash receipts, and slightly lower government payments. The reduction in production expenses expected for this year will offset much of the decline in gross income, leaving net farm income at a strong level, but still below the 1984 record. Assuming no major policy changes or weather disruption in the year ahead, net farm income is projected to decline to a range of $22 to $26 billion as gross income falls more sharply than production expenses.

Because the sharp decline expected for cash expenses outweighs the decline in gross cash income, 1985 net cash farm income may equal or exceed the 1984 record-high of $39.2 billion--ranging from $37 to $41 billion. Since 1979, net cash income in current dollars has averaged $37.6 billion while in deflated ($1972) terms it has averaged $19.3 billion.

In 1985 net cash income may equal or exceed last year's level for both crop farms and livestock farms as lower cash expenses outweigh reduced gross cash income. Net cash income is expected to decline somewhat in 1986 but remain above the average of the last six years (1979 to 1984) as Government programs continue to support farm income. Net cash income may range from $37 to $41 billion next year. The cash income position of cash grain, cotton, and other field crop farms each likely improved in 1985 because of lower expenses and continued strong Government payments. The cash incomes of cattle, hog, and sheep and dairy farms each are forecast to have improved significantly over 1984 while poultry and egg farms lost ground but still were much better than in 1983.

Financial Measures and the Balance Sheet

While the cash income position of most farms was at least equal to last year's performance, the overall financial picture may have degenerated due to the declines experienced in land values and farm equity in 1985. Nominal land values, which fell an unprecedented 13 percent in 1984, are

forecast to fall another 3 to 7 percent in 1985. As a result, farm real estate assets (of which about three-quarters is accounted for by land values) on December 31, 1985, excluding dwellings, are expected to decline 4 to 8 percent from the $639.6 billion of December 31, 1984. Much of this decline will again be centered in the Midwest corn and wheat belts.

Nonreal estate assets are currently expected to remain about even or decline slightly from the $216.5 billion level of December 31, 1984. If they remain even, this would end a 2-year decline caused partly by reductions in the number and value of equipment and motor vehicles on farms (of which cash grain farms hold 40 percent) and reductions in livestock and crop inventory values. In 1985, another decline is expected for machinery and motor vehicle inventories and livestock values (caused by drops in number and value per head of cattle and hogs); however, these will likely be offset by increases in crop inventories and financial assets. Because of the fourth consecutive annual decline in real estate values, total farm assets on December 31, 1985 are likely to be around $790 - $840 billion, compared with $856.1 billion on December 31, 1984.

Total farm debt outstanding (excluding households) on December 31, 1985 is expected to remain about even with the $198.9 billion level at the end of 1984. Excluding CCC loans, farm debt will be 2 to 6 percent below 1984, as both real estate and nonreal estate outstanding debt decline about 4 percent each. However, a large surge in CCC loan activity during the third and fourth quarters of 1985 caused by continued poor crop prices relative to CCC loan rates will offset declines in the other debt categories. Cash grain farms, which account for about 25 percent of all farms, hold about one-third of all farm debt. Roughly another third is accounted for by meat animal farms and ranches.

Because of the near-record crop production this year, many crop farmers under protection of Government programs generally have enough cashflow to enable them to pay down some of their debt. Real estate debt is expected to range from $96 to $101 billion, compared with $102.9 billion in 1984. This would be the largest year-to-year decline since 1944 with Federal Land Banks likely realizing the largest declines and loss of market share. Life insurance companies and individuals and others may also experience a fall in market share of real estate debt while the Farmers Home Administration and Commercial Banks increase their shares and outstanding loans.

Nonreal estate debt (excluding CCC loans) is expected to range from $82 to $86 billion, compared with $87.3 billion in 1984. Again, the Farmers Home Adminstration is projected to gain significant loan volume and market share at the expense of other lenders, especially the Production Credit Association and commercial banks. These declines in overall debt outstanding reflect both paydown of loans by farmers as well as losses of the individual institutions as outstanding loans are written down to the lower collateral value of non-performing loans.

Total nominal dollar net worth in the sector likely fell again in 1985 for the fifth consecutive year to a range of $595 to $635 billion, compared with $657.2 billion on December 31, 1984. Equity levels are still greater than during 1977 but 1986 may see yet another, although possibly smaller decline in farm equity. The debt-to-asset ratio, which has been steadily rising the past 5 years, is expected to be in a 23 to 25 percent range in 1985 compared with 23.2 percent in 1984 and 17.0 percent as recently as 1980. The debt-to-net cash income ratio will probably decline in 1985 for the third consecutive year and may give farmers some breathing room for debt servicing. Again, cash grain and meat animal farms, which hold two-thirds of the assets and debts in the sector, each have debt-to-income ratios nearly double the average for the sector. Vegetable, horticultural specialty, and poultry and egg farms have the lowest, with nearly a 1 to 1 ratio.

Return on assets, 4.3 percent in 1984, is expected to remain about the same in 1985 as both returns to operators and asset values decline in similar proportions. Total return to equity is expected to fall slightly in 1985 following the 13.2 percent decline in 1984. Return on equity from income is projected to be unchanged while losses will likely be only about 4 percent, compared with the 16 percent decline in 1984.

In the year ahead, (assuming no major policy changes) total farm assets may continue to decline, but at a reduced pace as the sector approaches equilibrium in this transition period. While assets are declining by up to 4 percent, total farm debt may also fall, especially real estate debt as farmers concentrate on repaying obligations on capital items. CCC debt may again rise as relatively low crop prices are expected to prevail given the burdensome stock situation now at hand. These movements are anticipated to reduce equity again and result in a small increase in the debt/asset ratio.

It may be some time before agriculture again experiences significant price and income increases. However, as the adjustment process now underway runs its course, returns on new investment in farming will again become competitive.

Item	1982	1983	1984	1985F	1986F
	— Billion Dollars —				
Farm income sources:					
1. Cash receipts	142.9	136.3	141.8	136-140	134-138
Crops 1/	72.7	66.8	69.1	66-70	64-68
Livestock	70.3	69.4	72.7	67-71	69-73
Cash Government payments	3.5	4.1	4.0	6-9	6-10
Value of PIK commodities	0.0	5.2	4.5	0	0
2. Direct Government payments	3.5	9.3	8.4	6-9	6-10
3. Farm related income 2/	2.6	2.5	3.0	2-4	2-4
4. Gross cash income (1+2+3) 3/	149.0	148.1	153.3	147-152	145-150
5. Nonmoney income 4/	14.0	13.1	12.9	11-13	10-12
6. Realized gross income (4+5)	163.0	161.2	166.2	158-163	156-161
7. Value of inventory change	-1.4	-10.6	7.8	-1-3	-4-0
8. Total gross income (6+7)	161.6	150.6	174.0	159-164	154-159
Production expenses:					
9. Cash expenses 5/ 6/	110.7	109.8	114.1	108-112	107-111
10. Total expenses	136.9	135.6	139.5	132-136	130-134
Income statement:					
Net cash income: 1/ 6/					
11. Nominal (4-9)	38.3	38.3	39.2	37-41	37-41
Deflated (1972$) 7/	18.5	17.8	17.5	16-18	14-17
Net farm income: 1/					
12. Nominal total net (8-10)	24.6	15.0	34.5	25-29	22-26
Deflated total net (1972$) 7/	11.9	7.0	15.5	11-13	9-11
Deflated total net (1967$) 8/	8.5	5.0	11.1	8-10	6-8
13. Off-farm income	37.9	38.8	40.0	39-43	40-44
Other sources and uses of funds:					
14. Change in loans outstanding 6/	7.3	3.5	-1.5	-10--6	-6--2
Real estate	4.0	2.5	-0.8	-6--3	-5--1
Nonreal estate 9/	3.3	1.0	-0.7	-4--2	-3-1
15. Rental income	5.7	4.6	5.4	4-6	3-6
16. Gross cash flow (11+14+15)	51.3	46.3	43.1	34-38	38-42
17. Capital expenditures 6/	13.7	13.0	12.5	10-14	9-13
18. Net cash flow 1/ 6/ (16-17)	37.6	33.3	30.7	22-26	26-30

r=revised. F=Forecast as of 11/19/85. 1/ Includes net CCC loans. 2/ Income from custom custom work, machine hire, farm and recreational activity, and forest products.
3/ Numbers in parentheses indicate the combination of items required to calculate a given item.
4/ Value of home consumption of farm products and imputed rental value of farm dwellings.
5/ Excludes depreciation and perquisites to hired labor. 6/ Excludes farm households. 7/ Deflated by the GNP implicit price deflator. 8/ Deflated by the CPI-U. 9/ Excludes CCC loans.

Table 6—Balance sheet of the farming sector, excluding operator households, December 31.

Item	1981 1/	1982	1983	1984	1985f	1986f
			Billion dollars			
Assets:						
Real estate	780.2	745.6	736.1	639.6	575 to 625	555 to 620
Nonreal estate	225.0	232.2	220.4	216.5	200 to 230	190 to 235
Total assets	1005.2	977.8	956.5	856.1	790 to 840	770 to 830
Liabilities:						
Real estate	97.3	101.2	103.7	102.9	96 to 101	93 to 99
Nonreal estate:						
CCC loans	8.0	15.4	10.8	8.7	14 to 18	17 to 21
Other nonreal estate	83.7	87.0	88.0	87.3	82 to 86	80 to 86
Total nonreal estate	91.7	102.4	98.8	96.0	98 to 102	99 to 105
Total liabilities	189.0	203.7	202.5	198.9	195 to 202	194 to 201
Total farm equity	816.3	774.2	754.0	657.2	595 to 635	570 to 630
			Ratios			
Selected ratios:						
Debt-to-asset	18.8	20.8	21.2	23.2	23 to 25	23 to 26
Debt-to-equity	23.1	26.3	26.9	30.3	31 to 33	31 to 35

F = forecast as of 11/14/85.
1/ Peak year for nominal asset values. Equity peaked in 1980.

FARM FINANCIAL SITUATION AND OUTLOOK -- FARM BUREAU PERSPECTIVE

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My discussion of the farm financial situation and outlook has the following parts:

1. Where's the debt and who owes it?

2. An assessment of the financial situation from the farm operator's perspective.

3. Potential adjustments of debts and assets held by farm operators.

In analyzing the financial situation at the Farm Bureau, we see continued adjustment of the farm operator debt load to levels that can be serviced from farm earnings. We see debt coming down to match earnings and not earnings going up to meet debt service. Estimates of where we are in the debt adjustment process vary depending on assumptions. We could be one-third done in writing down unserviceable farm operator debt.

The recent ratios of farm debt to net farm income are two to three times the levels of the last 30 years. From the farmer perspective the key questions are: how will this excess debt be discharged and how will the losses be shared?

Discussion of the financial situation often gets confused by various ideas that may help some farmers, e.g., lower interest rates, higher commodity prices, lack of credit, declining land prices and the problems in the Farm Credit System. Each distracts from the central economic issue at hand -- reducing the farm debt load to levels that can be handled out of expected farm earnings. Only then will farming be back on sound economic footing.

Where's the Debt? Who Owes the Debt?

Everyone agrees there is a debt problem in agriculture, but no one is quite sure how much debt is out there, who holds the debt, what the debt is being used for or how much of it can be repaid. Proposals to deal with the debt problem must recognize some of these unanswered questions, if they are to be effective.

Conventional wisdom puts total agricultural debt at about $212.9 billion on December 31, 1984. This is the estimate put out by USDA. USDA has put out end-of-year debt estimates for a number of years drawing on official estimates from the Farm Credit Administration, the Federal Reserve, the Commodity Credit Corporation and the Farmers Home Administration. Lending by farm input suppliers, individuals and others is estimated by USDA. Table 1 contains the complete USDA estimate of agricultural debt as of December 31, 1984.

TABLE 1

OUTSTANDING FARM DEBT
DECEMBER 31, 1984
(BILLION DOLLARS)

LENDER	REAL ESTATE		NON-REAL ESTATE		TOTAL	
BANKS	$10.2	9.1%	$39.7	39.2%	$49.9	23.4%
FLB/FICB	$49.1	44.0%	$18.8	18.6%	67.9	31.9%
LIFE INS. CO.	$12.4	11.1%	-----	----	$12.4	5.8%
FmHA	$10.0	9.0%	$15.7	15.5%	$25.7	12.1%
CCC	----	----	$ 8.9	8.8%	$ 8.9	4.2%
OTHER	$29.9	26.8%	$18.2	18.0%	$48.1	22.6%
TOTAL	$111.6	100.0%	$101.3	100.0%	$212.9	100.0%

SOURCE: Board of Governors of Federal Reserve System. "Agricultural Finance Databook," July, 1985.

Many analysts and policymakers assume that the entire $212.9 billion is owed by farm operators and that all the interest and principal payments associated with these debts have to come from production agriculture. A lot of these assumptions have been discredited by more specific debt estimates.

In early 1985, USDA did a Farm Costs and Returns Survey. Farm operators were asked detailed information about their agricultural income and expenses during calendar year 1984 and the value of their assets and outstanding debt as of January 1, 1985. Farm operators reported that as of January 1, 1985 they had agricultural production related debts of $120.2 billion. Table 2 summarizes farm operators' responses on debt held as of January 1, 1985.

TABLE 2
DISTRIBUTION OF FARM OPERATOR DEBT BY LENDER
JANUARY 1, 1985
(BILLION DOLLARS)

LENDER	REAL ESTATE		NON-REAL ESTATE		TOTAL	
Commercial Banks	14.1	18.9%	19.8	43.3%	33.9	28.2%
Federal Land Banks	27.1	36.5%	2.9	6.3%	30.0	25.0%
Production Credit Associations	4.3	5.8%	7.6	16.5%	11.9	9.9%
Farmers Home Administration	11.7	15.6%	4.6	10.0%	16.3	13.5%
Commodity credit Corporation	.2	0.3%	1.4	3.1%	1.6	1.4%
Merchants	.2	0.3%	2.0	4.5%	2.2	1.9%
Individuals	12.0	16.1%	5.2	11.3%	17.2	14.3%
Others	4.8	6.5%	2.3	5.0%	7.1	5.9%
TOTAL	74.4	100%	45.8	100%	120.2	100%

Source: Farm Costs and Returns Survey, 1984, USDA.

By combining some of the lender groups shown in Tables 1 and 2, a direct comparison can be made between the two different estimates of outstanding debt. These appear in Table 3.

TABLE 3
COMPARISON OF TWO MEASURES OF AGRICULTURAL DEBT
JANUARY 1, 1985
(BILLION DOLLARS)

LENDER	1) TOTAL AGRICULTURAL DEBT	2)FARM OPERATOR DEBT	DIFFERENCE
Banks	49.9	33.9	16.0
FLB/PCA	67.9	41.9	26.0
FmHA	25.7	16.2	9.5
CCC	8.9	1.7	7.2
Others	60.5	26.5	34.0
TOTAL	212.9	120.2	92.7

1) USDA 12/31/84 2) USDA Cost/Returns Survey as of 1/1/85

The differences in debt data cannot, obviously, be ignored. Since the USDA estimate of agricultural debt comes from official sources, a reasonable assumption can be made that the estimate of $212.9 billion of agricultural debt on December 31, 1984 is an accurate estimate.

The evidence available indicates that the farm operator debt is a reasonable estimate. The survey covered a lot of areas other than farm debt and assets, and the results from these areas are consistent with estimates from other sources. For example, the estimate of wheat production for 1984 based on the survey data was within a couple of percentage points of the wheat production estimate from the Statistical Reporting Service.

The estimates of farm operator assets and debts are also consistent with the results from the 1978 Census of Agriculture credit survey that was done in 1979 and the 1982 Census of Agriculture.

We can say with a fair amount of confidence that the farm operator debt estimates from the USDA Farm Costs and Returns Survey is a reasonable estimate of the actual debt held by farm operators.

With that out of the way, the question then becomes, if farm operators do not control the other $90 billion, then who does?

The most obvious answer for part of it is landlords. These people borrow money to finance land purchases and under various types of crop and livestock share lease programs are responsible for some inputs, which may be financed by borrowing. With the amount of outside investment that came into agriculture from the mid-1970's until the early 1980's, this amount may be larger than many people guess. Unfortunately, no data is available on this. What we do know is that in 1982, 42 percent of the farm land operated by farmers was rented from other owners. There are many more farm ownership units than there are farm operator units.

Some owners of land use it as collateral to borrow money for nonagricultural purposes. The loan is on agricultural land, but the purpose is totally nonagricultural.

People who live in rural areas borrow from institutions that serve agriculture and often the line between agricultural loans and nonagricultural loans gets rather blurred. This is particularly true for houses and small acreages.

A portion of the debt held by farm operators is debt associated with normal living activities like cars, housing, furniture and similar items. This was estimated by USDA at $13.9 billion on December 31, 1984. Since 69 percent of the farms produce only 13 percent of the output, the majority of this debt is held by farmers who rely on off-farm income to pay the debt.

Even after considering this, it's still hard to believe that nonfarm operators hold $80 billion of agricultural debt. What definitely can be said is that farm operators are not responsible for all the $213 billion of debt labeled as agricultural debt and any new credit policies based on the $213 billion number will be in error.

The few people who have seriously studied this issue generally agree that the nonoperator debt is probably in stronger hands than the operator debt. Farmland investors have other incomes to help meet principal and interest payments and landowners that used land collateral to borrow for other purposes did not plan to rely on the land to repay the loan.

Any credit program that is aimed at representing the best long-run interests of production agriculture must direct its central focus on the estimated $120 billion plus debt held by farm operators and the debt adjustments that must take place around this number.

Summary of the Financial Situation of Farm Operators

The agricultural finance situation is a complex web that ties together farm operators, landowners, financial institutions and farm input suppliers. How people view the situation is somewhat influenced by their position in the web and how they perceive the construction of the web. Since the financial health of all portions of the farm financial situation depends on farm operators' abilities to generate cash flow and income to pay debts, a review of the financial situation of farm operators is key in analyzing the farm credit situation.

We have found that the best source of the financial situation of farm operators is USDA Agriculture Information Bulletin Number 495, "Financial Characteristics of U.S. Farms, January, 1985." This study summarizes financial and cash flow data provided by USDA's Farm Costs and Returns Survey. The survey gathered cost and return data from farm operators for calendar year 1984 and debt and asset values as of January 1, 1985.

The survey included all size farmers, but our analysis only included those operators with gross sales of $40,000 a year or more. These are the full-time and part-time operators that produce almost 90 percent of the agricultural output. Virtually all of the farms with sales of less than $40,000 per year have operators who provide for most of their family living and debt payments with off-farm income or have operators that are semi-retired. From a policy standpoint these operators pose little, if any, problem.

In summary, all farm operators had assets of $544.0 billion and debts of $120.2 billion, a debt-to-asset ratio of 22.1 percent, on January 1, 1985. Operators with gross sales of $40,000 per year or more had assets of $371.6 billion and debts of $99.1 billion, a debt-to-asset ratio of 26.7 percent. Of these producers, 69 percent had debt-to-asset ratios of less than 40 percent and 31 percent had debt-to-asset ratio of greater than 40 percent. Almost 5 percent of the operators had debt-to-asset ratios above 100 percent.

Farm operators with debt-to-asset ratios of less than 40 percent control 75 percent of the assets and 36 percent of the debt held by farm operators.

For operators with debt-to-asset ratios of less than 40 percent, 34 percent had negative cash flows in 1984. Among operators with debt-to-asset ratios of 40-70 percent, 61 percent had negative cash flows. Of the operators with debt-to-asset ratios of 70-100 percent, 75 percent had negative cash flows. For operators with debt-to-asset ratios above 100 percent, 70 percent had negative cash flows.

Debts, Assets and Cash Flow of Farm Operators

The two key variables in looking at the financial condition of farm operators are debt-to-asset ratio and cash flow. The first gives an indication of the amount of lender losses that would occur if an operation is restructured or liquidated and the second gives an indication of the farm operator's ability as a going business concern to generate cash flow to pay production expenses, interest, principal and living expenses. Table 4 shows the amount of assets and debts held by farm operators based on debt-to-asset ratio and positive or negative cash flow.

TABLE 4
ASSETS AND DEBTS HELD BY FARM OPERATORS WITH GROSS SALES OF $40,000 PER YEAR OR MORE
JANUARY 1, 1985

OPERATOR GROUP	NUMBER OF FARMERS	ASSETS	DEBTS	ASSETS MINUS DEBTS
		MILLION DOLLARS		
D/A RATIO 100% Plus	30,578	9,030	13,049	(4,019)
D/A RATIO 70-100% NEGATIVE CASH FLOW	33,682	15,232	12,621	2,611
D/A RATIO 70-100% POSITIVE CASH FLOW	11,183	4,744	3,655	1,089
D/A RATIO 40-70% NEGATIVE CASH FLOW	73,622	42,980	22,958	20,022
D/A RATIO 40-70% POSITIVE CASH FLOW	47,814	21,475	11,057	10,418
D/A RATIO 0-40% NEGATIVE CASH FLOW	147,776	103,911	16,587	87,324
D/A RATIO 0-40% POSITIVE CASH FLOW	291,801	174,220	19,183	155,037

SOURCE: Farm Costs and Returns Survey, 1984, USDA

Potential Lender Losses

The information in Table 4 provides a good base for looking at potential lender losses. Those farm operators with higher debt-to-asset ratios are more likely, in general, to cause lender losses than those with lower debt-to-asset ratios, and those operators with negative cash flows are more likely to cause lender losses than those with positive cash flows. What we do not know is what has happened to asset values and debt loads since January 1, 1985 for these groups and what is likely to happen over the next year or two.

A reasonable assumption would be that with some erosion of land prices since January 1, 1985 and relatively depressed farm equipment markets, net proceeds of asset sales would be about 20 percent less than the asset values of January 1, 1985. Another reasonable assumption would be that debts for these operators have increased by 10 percent since January 1, 1985. Many other combinations of adjustments of debts and assets could be used and arguments could be made in support of other adjustments, but these appear to be good ballpark estimates.

For the purpose of this analysis, the assumption is made that any operator who is liquidated or faces substantial financial restructuring, will have assets valued at 20 percent less than the January 1, 1985 estimates and debts 10 percent higher than those of January 1, 1985.

The other assumption that has to be made is about the percent of operators in each of the groups shown in Table 4 that will be forced out of business or undergo a substantial financial restructuring that may result in financial losses for lenders. The only thing we can do is make reasonable guesses.

A good place to start is with farm operators with debt-to-asset ratios of greater than 100 percent. A reasonable assumption is that all of these operators will exit agriculture or undergo financial restructuring. This group is in bad shape and getting worse quickly.

The next worse group is those with debt-to-asset ratios of 70-100 percent and negative cash flow. Lenders will likely try to stop the hemoraging here before this gets worse. The assumption is made that 80 percent of these will exit or undergo financial restructuring.

A third group that may face substantial pressure is those with 70-100 percent debt-to-asset ratios and have positive cash flows. These operators have met their financial commitments, but lenders may be concerned about their ability to repay future loans. The assumption is made that 50 percent of these operators will exit or undergo financial restructuring.

The final group that may be under pressure is those operators with debt-to-asset ratios of 40-70 percent and negative cash flows. These operators have decent balance sheets, but lenders will be concerned because they are losing net worth under current conditions. The assumption is made that 35 percent of these will exit or undergo financial restructuring.

Those are the four groups that face the greatest financial pressure. For the purpose of this analysis, the assumption is made that little or no lender losses will occur in the other three groups of farm operators.

Table 5 provides a summary of changes in assets and debts and likely lender losses under the scenario just outlined.

TABLE 5
POTENTIAL LENDER FINANCIAL LOSSES IN AGRICULTURE

OPERATOR GROUP	ASSETS & DEBTS (MIL $)	% ADJ	ADJUSTED VALUE ASSETS & DEBTS (MIL $)	PERCENT OF OPERATORS MAKING ADJUST-MENTS	VALUE OF ASSETS & DEBTS IN ADJUSTMENT (MIL $)	LOSS (MIL $)
D/A RATIO 100%	9,030	-20%	7,224	100%	7,224	(7,130)
	13,049	10%	14,354	100%	14,354	
D/A RATIO 70-100% NEGATIVE CASH FLOW	15,232	-20%	12,186	80%	9,749	(1,357)
	12,621	10%	13,883	80%	11,106	
D/A RATIO 70-100% POSITIVE CASH FLOW	4,744	-20%	3,795	50%	1,898	(113)
	3,655	10%	4,021	50%	2,011	
D/A RATIO 40-70% NEGATIVE CASH FLOW	42,980	-20%	34,384	35%	12,034	3,195
	22,958	10%	25,254	35%	8,839	
TOTAL LENDER LOSSES						(8,600)

As can easily be seen in Table 5, the big losses for lenders occur with those operators with debt-to-asset ratios greater than 100 percent. After the adjustments in value of assets and debts, they have about twice as much debt as assets. Some losses occur with those operators with 70-100 percent debt-to-asset ratios and negative cash flow. Those with debt-to-asset ratios of 70-100 percent and positive cash flow are about break-even from the lenders view point. Lenders lose no money on those with debt-to-asset ratios of 40-70 percent and negative cash flows because after the adjustments of assets and debts, the value of assets substantially exceed debts.

Combined losses from the three groups are about $8.6 billion. This probably understates actual losses because losses were based on the situation of each group of operators rather than each operator. A reasonable estimate under this scenario is that lender losses would be about $10.0 billion with about three-fourths of the losses coming from operators with debt-to-asset ratios of greater than 100 percent on January 1, 1985.

Several other scenarios were run to test other likely outcomes. If asset and debt values remain at the January 1, 1985 level and the same operators exit or face major restructuring, lender losses would be about $5 billion. That would be about the least losses that could be expected. Losses are not likely to exceed $10 billion, unless assets decline in value by more than 20 percent.

Now that we have identified that $10 billion of farm operator debt will be lost, the next step is to look at the who and when of taking the losses. For the sake of discussion, it is safe to say that this debt will be written off over a three year period of calendar 1985 through 1987. Unless our computer slipped a gear, that is about $3.3 billion per year.

Whether lenders can absorb $3.3 billion per year is somewhat unknown, but the limited amount of information available indicates that they can do so. According to the Federal Reserve, insured commercial banks wrote off $900 million in agricultural production loans during 1984. The Farm Credit System wrote off about $400 million of loans in 1984, three-fourths of which were PCA loans. For 1984 these two groups of institutions wrote off $1.3 billion of agricultural loans.

Loan write-offs have been running substantially larger so far in 1985. Commercial banks wrote off $550 million in loans for the first half of 1985 and we are guessing that they will write off $800 million in the second half for a total of $1.35 billion for the year.

The farm credit system wrote off almost $300 million in the first half of 1985 and we expect them to write off $650 to 700 million in the second half of 1985. Total write-offs for the system will be about $950 million, and banks and the farm credit system together will have written off about $2.3 billion.

But this is not the end of the write-offs. We expect substantial adjustments of loan values in the "other" category. You may recall from the earlier numbers that "other" lenders had about $48 billion of total agricultural debt using USDA's December 31, 1984 estimates with $30 billion of it in real estate debt. Farm operators reported they owed merchants, individuals and others about $26 billion with $17 billion in real estate debt as of January 1, 1985. We believe that $1-2 billion of this debt will be written down during 1985, particularly on land debt. This will mostly be paper transactions that recognize that some pretty "bad" judgments were made a few years ago and the time has come to renegotiate.

The bottom line is that write-offs of farm operator debt will likely be in the $3.5 - $4.0 billion area for 1985 and we will be well on our way to cutting $10.0 billion over three years. Note that these numbers do not include write-offs by insurance companies, Farmers Home Administration and the Commodity Credit Corporation. These will be smaller than the categories mentioned above, but certainly not insignificant.

Since I am this far out on the limb already, I'll plunge on into 1986. Commercial banks will likely have loan write-offs at the 1985 level, but not larger. The Farm Credit System will have larger write-offs with the increase coming in land loans. The other category will have write-offs at about the same level. FmHA write-offs will be small while CCC write-offs will increase substantially as they take over a lot of the 1985 crop put under loan.

In 1987, write-offs by commercial banks and others will decline substantially. Farm Credit System and FmHA write-offs will increase.

This is not to say that all of this will be pretty or nice, only that the process is already going and may not be as frightening as some would imply.

Concluding Comments

From the farmer's perspective, the financial situation boils down to a question of whether the reduction in debt will be "paid for" through farm operators leaving farming and the assets repurchased at lower prices by other producers or through debt restructuring for present farmers that will facilitate an orderly reduction by some specific date of the farm operator debt down to serviceable levels. Debt restructuring by definition means a loss sharing among borrowers, lenders and taxpayers.

If all the farmers associated with the lender losses I discussed earlier are forced out of business, about 90,000 commercial farmers would exit farming over three years starting with 1985. This is about 15% of the commercial farmers. Unless farms get bigger to absorb all of this, 90,000 new commercial farmers would have to be financed by lenders.

Our guess is that this is not feasible. The discussion over the next year will be focused on how to keep some of these 90,000, probably about half of them, in business while reducing their debt loads to manageable levels. From an economic standpoint, some of the 90,000 can't be saved without massive infusions of taxpayers' money and probably should not be saved. Those that should be helped are those that lenders can work with with limited taxpayer assistance.

It is customary, these days to tick off the various reasons as to how we got into the financial problems we are in. The "big four demons" -- national debt, interest rates, export policy and the strong dollar -- are condemned widely by economists and noneconomists alike as being the primary roots of our present evils. But if commercial agriculture has to base its survival upon early correction of these intensely complicated macro-economic issues, armageddon may arrive first.

Moving ahead in production agriculture will mean that we learn from our mistakes. Regardless of the macro-economic climate served up by the federal government and the Federal Reserve, we must remember that net returns or gross profit on revenues must take precedence over balance-sheet lending and the tendency to define farming success by owning land, buildings and equipment.

The main focus of this paper has been to estimate the number of farmers to be impacted by the debt adjustments that are underway and the lender losses associated with these adjustments.

As an economist with Farm Bureau, an overriding concern is to preserve the economic health of the farmers who are not in financial difficulty. The only way to do this is to keep markets growing. Policy failures on the market side will translate into failure to cope with the debt issue as more farmers slide into financial trouble.

The market issue is vital to all farmers. Without growing markets no part of agriculture will prosper. All farmers must produce and sell. In 1986, production agriculture has some important market things going that were not evident over the past five years. World economic growth is stronger. There are fewer incentives for competition to produce. Interest rates are lower. Foreign currencies are stronger.

In the short run, farm programs must be aimed at: (1) reducing existing stocks and not encouraging future stockpiling; and (2) price competitiveness.

Reducing existing stocks and avoiding future stockpiling must be achieved in order to position U.S. farmers for market income opportunities in future years. Essential to short-run farm program operation are voluntary acreage reduction programs coupled with an effective conservation reserve. These programs can help keep stocks from rebuilding.

Four years of declining export market earnings is ample evidence that our products are simply not price competitive. Swift and decisive action must be taken to stop the export market slide. Loan rates are strategically important to short-run price competitiveness.

While everyone is dwelling on the 1985 farm bill, the markets, in general, have already discounted the fact that little change in the status quo is likely. Until there is a new farm bill, those who are interested in markets know that immediate action must be taken to improve the situation. Loan rates must be adjusted and grain not allowed in the farmer-held reserve.

For the longer run, there seems to be general agreement in Congress that farm program pricing in the future must be tied to market prices. If the federal farmer-held reserve is not eliminated -- or drastically limited in size and operation -- tying loan rates to market prices will be a policy exercise in futility. Market-based loan rates are imcompatible with the farmer-held reserve when used to try and prop up prices in the face of quasi-limits on federal farm program spending.

In closing, if market issues are not addressed quickly, managing the debt problem will fast become a policy impossibility.

AGRICULTURAL CREDIT OUTLOOK
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Perspective

Before trying to look ahead, it seems useful to take a moment to obtain perspective. When beginning my professional career in agricultural finance, I remember looking at data from the 1930s. It seemed odd that the debt to asset ratio of the sector increased as the depression wore on while both debts and assets of the sector decreased. I had not expected to see that phenomenon repeat, but we are again witnessing an increase in the debt/asset ratio of the farming sector while both asset values and debt are decreasing.

By the 1950s and 1960s agricultural finance economists were arguing the importance of credit as a tool of production, as a means for increasing return to equity, and for expanding a business to achieve size advantages. The focus of those articles was usually on repayment capacity and on earning a return in excess of interest costs. By the 1970s, the ease of lending and borrowing on equity to capture inflationary gains in land and durables had helped equity replace repayment capacity as the major (but questionable) criterion for credit.

Further, as Melichar has aptly pointed out on numerous occasions, the returns to assets in agriculture since 1960, except for the '73-'75 "blips", have been relatively stable--although the "blips" mentioned served as a basis for sector capital gains that were a major reason for current problems. As the huge real capital gains of the 1970s were replaced by large real capital losses in the 1980s, balance sheets of individual farm operators deteriorated like the "emperor's clothes" revealing the naked lack of debt repayment capacity.

Hence, while sector returns to assets were relatively stable, sector returns after interest payments had, by 1982, become negative due both to excessive sector debt in relation to earnings (repayment capacity) and high rates of interest.

Since 1982 the nation's farmers have scrambled to adjust their businesses in light of the new realities: 1) higher real (and nominal) interest rates, 2) deflation in output prices, and 3) the resulting loss of value of durable assets. This scramble to adjust is particularly difficult because of the extreme negative cash flow effects of declining commodity prices. Lower asset values also limit the ability of financially stressed farm operators to sell off assets to pay down debt. Hence, the paydown in debt does not match the decrease in durable asset values, and the aggregate farm debt/asset ratio rises. It would be even worse, however, if the U.S. economy had remained in recession because there would be few jobs for displaced farmers to obtain. Those effects are not uniform though, and a strengthening U.S. economy is of limited help to an isolated rural community almost completely dependent upon agriculture.

Outlook for Farm Credit

1) Outstanding farm credit will continue to decline.

Farmer paydown of debt and write-offs of bad debt by farm lending institutions will reduce outstanding farm debt in January 1986 compared to year earlier and likely also in January 1987 compared to 1986. My guess is that outstanding farm credit will shrink by a 3-4 percent annual rate by January 1986 and again by January 1987 although CCC lending will likely be up in the year ending January 1986.

2) Farm credit will be more difficult to obtain.

The continuing difficulties of the nation's farmers, now spreading into the financial system, will lead to closer scrutiny of farm operations, additional caution and conservatism with respect to approval of new loans, and requirements of more complete documentation as a basis for lending. Lenders are scared about the financial condition of agriculture.

It would be nice to predict that lenders had learned from their mistakes of the past and that they will do a better job of lending next year and in coming years. Unfortunately, that is not likely to be the case. The overemphasis on balance sheets in the 1970s has continued into the 1980s and will likely continue in the next several years. Too many lenders will look at declining equity of individual balance sheets, use that as a reason to cut back on loans to those businesses, and again overlook the importance of repayment ability. This short sightedness,

(in some instances, an overreaction to current trends), will lead to mistakes that force viable operations out of business and that undercapitalize others.

3) Farm credit will be available to those who can sell their credit needs.

Those farmers who are not too deeply in debt and/or can make a rate of return in their businesses high enough to repay the loans they seek will be able to obtain credit. They may have to visit more than one lender to do so, and they will need to maintain records and to understand their businesses well enough to sell the lender on their creditworthiness. This is simply a continuation of the changing lender-borrower relationship which, within the past half dozen years, has changed from a lender-courting-borrower relationship to a farmer-good-guy-lender-bad-guy or borrower-courting-lender relationship depending on the degree of financial stress and the individual situation.

4) Important and far-reaching changes will occur in farm lending institutions.

The Cooperative Farm Credit System (CFCS) is seeking government help to deal with their developing problems of loan losses. That help is likely to be slower in coming than desirable, but ultimately some form of help will be forthcoming. The potential damage from failure of the CFCS to both the agricultural sector and to the total financial system is simply too great not to keep the System afloat. The real questions concern the form and timing of the help and the implications of that help for future organization and operation of the System. The only insight I have to offer is that, whatever the form of help, it will be too long in coming.

In dealing with its developing problems, the CFCS is already making changes that have important implications. The consolidation occurring at the local and district levels at an almost unbelievably rapid rate is removing decision-making from local to regional, and regional to national levels. In short, massive centralization of decision-making is taking place as a part of the System's own response to its problems. Local PCA and FLBA boards will have less say in loan decisions. In fact, as a result of ongoing reorganization to substantially larger or even district-wide PCAs, there may be no such thing as a "local board" left. One might question whether a form of organization that worked well for 50 to 67 years until 1982 or 1983 should now be discarded. In fact, one could argue that some of the

current problems resulted in large part from district bank pressures for local employees to obtain loan volume, penetrate the market, etc.

In a similar manner, those districts having the worst problems are seeing their decision-making taken away, perhaps appropriately, toward more centralization. But, the question is, if decision-making is taken away from some districts, won't the same policies be applied to the rest?

As a result of System losses, higher interest rates to cover loan losses of other borrowers, and potential future losses, the CFCS is losing some of its best borrowers. Others are questioning whether to remain in the System. If they remain, they foresee higher cost credit, risk of loss of their stock, and loss of local control by their elected loan committees and local boards.

These difficulties are also tearing at the organizational fabric of the CFCS. Past policies to capture more of the market, to shift regulatory power to district banks and to market a consolidated debt instrument backed by all parts of the System have left it vulnerable to the economic problems of the agricultural sector. Hence, after more than 50 years of sharing the benefits of cooperation--agency status, group access to money markets at near Treasury rates, and joint-obligation, consolidated systemwide bonds--some parts of the System appear ready to go-it-alone rather than share the "hard times" now upon them.

One can understand the perspective and rationale of those districts with low loss rates who are trying to avoid the losses incurred by other districts. Nevertheless, if districts are allowed to disassociate from the System, the organizations that will emerge are, at best, difficult to predict, if indeed, they survive at all.

In short, there are likely to be more changes, and more substantive changes, in the Cooperative Farm Credit System in the next one to three years than at any time since its creation. These will likely include much more centralized decision-making, less local control and reduced responsiveness of loan officers, government recapitalization of the system, and a somewhat smaller agricultural loan portfolio.

Commercial banks have a new opportunity to serve agriculture if they are not overwhelmed with their own problems of deregulation, interest rate risks and default risks. Increasing numbers of agricultural banks have failed

in each of the last three years. This trend will continue into 1986. Like the CFCS many agricultural banks need public help if they are to survive--though the banking system apparently is not at risk.

Equitable treatment of private sector agricultural lenders would imply that public help should be made available to agricultural banks as well as to CFCS. Unfortunately, bankers as a group are not willing to publicly state their need for such help. Also, since the problems from agriculture are not systemwide within banking, but rather involve problems of individual banks, the means for providing public help are difficult to envision and prescribe. Unless agricultural bankers or their spokespersons acknowledge their need for help, no public help will be forthcoming and individual banks will continue to fail at an unusually high rate.

Nevertheless rural banks will take the opportunity provided by CFCS problems to pick up many of the better borrowers leaving the Farm Credit System. Banks do have a problem, however, in providing real estate credit to their borrowers. Variable interest rates should diminish their hesitancy to make at least some long term loans. Yet, with the consolidation of PCAs and FLBAs occurring in many regions, banks will find it more difficult to share financing with FLBAs than in the past. They will need to establish new relationships with life insurance companies or develop ways to foster a secondary market for real estate paper.

Commercial banks have a temporary interest rate advantage over CFCS lenders in much of the country. As interest rates have declined, marginally priced bank rates have dropped more than the CFCS rates which are based on average costs of money. Both CFCS and bank rates have dropped more slowly than basic money market rates during recent months because of the need to cover losses and to increase loss reserves. Interest rates sooner or later will turn upward again. When they do, banks will see their interest rate advantage diminish as their rates rise faster than those of CFCS.

FmHA's future is more difficult to predict. Since the early 70s, FmHA has changed from a minor player to a major lender in the farm credit market. In case you hadn't looked lately, FmHA is the second largest source of nonreal estate farm credit behind commercial banks. Because it is a government agency, it's role tends to be inconstant. The present administration would like to get FmHA out of farm lending, but events and Congress won't let that happen.

During crises, including this one, FmHA tends to get new authorities for lending. Hence, their farm lending, even though there was substantial footdragging at times and places, has increased. Since the present financial problems are likely to continue for awhile longer, FmHA's involvement in taking over stressed farm situations and its role as a means of shifting some of the private sector losses to the public sector will likely continue and may well become more important.

5) Farm lenders need to improve their debt servicing and counseling of borrowers.

In difficult times, better communication is needed between lender and borrower. Lenders will, and should, take the initiative. At least annual consultations are needed to review the borrower's records and farm plans, but a part of the discussion should also include lender policies. Too many farm borrowers have been surprised when the lender shut off further credit or gave notice of foreclosure. Perhaps worse yet, we are hearing of instances where the lender encourages (or forces) paydown of debt and then immediately proceeds to foreclose.

Both better quality records and improved ability to interpret those records are needed. Had more lenders understood the importance of debt service ability and <u>earned</u> increment added to the balance sheet, there would have been fewer lender and borrower losses. Lenders must also encourage farm managers to emphasize their role as manager of the business, and they must refrain from pressuring for imprudent cost control and sale of assets that enhance short-term cash flow but reduce the potential for profitability and business survival. Lenders may also need help from others such as extension agents to counsel farm families. When records show an inability to continue farming, extension and other local agencies can play an important role in helping farm families through the transition.

Outlook for Farm Interest Rates

No one knows, of course, where interest rates are headed. Neither do I. With the benefit of some large econometric model, perhaps I could mislead you into thinking otherwise. Interest rates, however, are people-made rather than a result of nature. Therefore, let me suggest what the people who effect interest rates may bring about.

The interest rate policies of the last five years, i.e. a contractionary monetary policy in response to an expansionary fiscal policy, brought the agricultural sector perilously close to the edge of disaster (some people went over the edge). The sector is still reeling from those policies as are some other sectors including most basic commodity sectors. One must assume that the monetary authorities are aware of this and that they will think twice about implementing policies to raise interest rates--especially in the absence of evidence of significant new inflationary pressures. Also, there is reason to believe the monetary authorities have changed from the policy of focusing only on money supply to the exclusion of interest rates, and therefore, that interest rates in the relatively near term will be less volatile than in the past five years. Unfortunately, there is little evidence that fiscal policies will improve to take the pressure off monetary policy.

Over the next year, then, I expect stable to slightly declining interest rates. Probably rates will remain between present levels and one percentage point lower unless the economy starts to overheat. Even then interest rate volatility is likely to be less than in 1979-1983. Agricultural lenders can be expected to continue to maintain higher margins than used to be the case over basic costs of money to cover losses.

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FARM CREDIT PERSPECTIVE
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Farm credit conditions across most of U.S. agriculture have changed markedly from just a few years ago. The return of abundant supplies of farm commodities, high real interest rates, a high value for the U.S. dollar, and sluggish world economic growth has resulted in high levels of financial stress for American agriculture.

As a result, the Farm Credit System (FCS), a major institutional lender to agriculture, has experienced substantial financial problems. Levels of nonaccruing loans and loan losses have soared as the system has sought to appropriately reflect the deteriorating quality of its loan portfolio.

The Farm Credit Administration (FCA) has proposed a comprehensive package of legislation that includes strengthened regulatory standards, a capital corporation to serve as a workout bank for the System, and a backup line of credit from the U.S. Treasury.

Reflecting the general need of the agricultural sector to reduce its debt position and the financial condition of many farm borrowers, as well as competitive market and financial forces, the system's total loan portfolio continues to retract at record rates.

In the 9 months ended September 30, 1985, outstanding loan volume of the system declined by 8.1 percent, from $80.6 billion to $74.1 billion. The totals do not include outstanding loans of the Federal Intermediate Credit Banks to Production Credit Associations because of their duplicative nature.

The Federal Land Banks reported total loans outstanding of $49.3 billion on September 30, compared to $51.1 billion at the end of June and $52.3 billion on December 31, 1984. The 9-month drop was 5.7 percent.

The Federal Intermediate Credit Banks, which provide loan funds to Production Credit Associations and other financing institutions serving agricultural producers, saw outstanding loan volume drop 8.9 percent during the period, from $17.3 billion at the end of 1984, to $16.2 billion on June 30, 1985, and to $15.7 billion on September 30.

Outstanding loan volume of the Production Credit Associations declined 10.9 percent from December 31, 1984, to September 30, 1985. Total loans outstanding stood at $16.4 billion on September 30, $17.1 billion on June 30, and $18.4 billion at the end of 1984.

The Banks for Cooperatives, although not as adversely affected by economic conditions in agriculture as other system institutions, have nonetheless experienced a decline in loan volume of 13.3 percent in the 9 months. They reported outstanding loans of $9.0 billion on December 31, 1984, $8.3 billion on June 30, 1985, and $7.8 billion at the end of September.

The decline in FCS credit outstanding is due in part to a general reduction in credit use by farmers. But there is also little question that the problems

confronting the system and the effect of those problems on its competitive position are among the factors contributing to the declining loan volume.

The system obtains almost all its loan funds through the sale of securities -- bonds and discount notes -- in the Nation's capital markets. A confluence of events has caused a dichotomy in what the system pays for money and the rates it charges borrowers.

At a time when interest rates in financial markets have been declining, the system's problems have held its cost of funds substantially above what historical price relationships would suggest.

One of the measures of success in the marketing of system securities is the difference between their cost and the cost of comparable issues by the U.S. Treasury. The average spread on comparable short-term issues in 1984 was 8 basis points, a basis point being 1/100th of 1 percent. As recently as the first 6 months of 1985, the spread was as low as 1.5 basis points. Historically, the spread has ranged from 15 to 30 basis points.

As the financial stress being faced by the system came to the forefront, the spread began to widen. By July, it was 20-22 basis points, and in September, when the FCA announced the prospective need for Federal financial assistance, the spread grew to 84 basis points.

Because of diminished investor confidence in the system, two 9-month bond issues have been canceled, and the system has had to rely heavily on the 6-month bond and discount note market for its funding requirements. One term issue, a

2 1/2-year bond, has been sold since spreads have widened, and it carried a 100 basis point spread. A second term issue, an 18-month bond, carried a spread of 90 basis points.

Despite the record spreads the system has paid on its securities, all three of its banking groups have managed to lower their average cost of funds at practically every pricing from January to November. This is because market rates have been declining and the system's maturing issues carried higher rates than its new issues. Rates on 6-month U.S. Treasury issues declined by 40 basis points from January to November 1. Over the same period, the average cost of the system's bond portfolio declined by 52 basis points.

From January 1 to November 1, the average cost of the bond portfolio of the Federal Land Banks went down from 11.9 percent to 11.6 percent, outstanding bonds of the Federal Intermediate Credit Banks declined from 11.0 percent to 9.4 percent, and those of the Banks for Cooperatives dropped from 11.2 percent to 10.5 percent.

But even though market rates have declined during the year, Farm Credit System institutions in several districts have had to raise the interest rates charged borrowers to bolster their provisions for loan losses.

For Production Credit Associations as a whole, the median interest rate declined from 12.9 percent on January 1 to 12.0 percent on October 1. However, nearly 40 percent of the associations in one district are still charging 13.5 percent or more, and three-quarters of the associations in four districts are charging rates above 12 percent.

The average interest rate charged by the 12 Federal Land Banks rose from 12.15 percent on January 1 to 12.35 percent on October 1. Since June 1, one Federal Land Bank increased its rate from 12.5 percent to 13.25 percent, another went up from 12.75 percent to 13.50 percent, and a third increased its rate from 11.75 percent to 12.25 percent.

The necessity to generate income to meet loan losses becomes apparent when the loan performance of system institutions is reviewed.

On September 30, $6.1 billion of FLB loans outstanding was non-performing, with $3.3 billion classified as non-accrual. On June 30, non-performing loans totaled $5.4 billion and non-accruals $1.8 billion. And, going back to December 31, 1984, the figures were $4.0 billion and $1.1 billion, respectively. So non-performing loans among the Federal Land Banks increased from 7.6 percent to 12.4 percent from the end of December 1984 to the end of September 1985, while non-accruals rose from 2.1 percent to 6.7 percent. The Federal Land Banks recorded loan charge-offs of $90.4 million for all of 1984 and $279.3 million for the first 9 months of 1985. Between December 1984 and September 1985, allowance for losses went from $547.1 million to $915.6 million.

The Farm Credit Banks may be exposed to loan losses aggregating $3.0 billion or more during the 1986-1987 period. As of September 30, 1985, an allowance for loan losses of $1.089 billion had been established. The Federal Land Bank Associations and Production Credit Associations held additional allowances for losses of $490.2 million. Appropriate additions for loan losses will be made in the fourth quarter of this year based on an analysis of loss exposure in the banks' individual loan portfolios.

It is no coincidence that this year's rapid deterioration in credit quality among the Federal Land Banks came on the heels of a decline of more than $100 billion in farm real estate values during 1984 and $154 billion since 1981. In many areas, the drop in land values was sharp enough to cause loan collateral values to drop below loan balances. Consequently, loans that had been classified as performing fell into high-risk categories. Other borrowers who in the past could use their equity positions to support temporary cash shortfalls found this option no longer available to them. So while the financial problems of agricultural producers were first felt among the Production Credit Associations, most of whose loans are relatively short term, they hit the Federal Land Banks hard and fast when land values crashed.

Non-performing loans of the Federal Intermediate Credit Banks were $4.0 billion on September 30, of which $104.7 million was in non-accrual status. Their non-performing loans were $3.8 billion on June 30 and $2.4 billion at the end of 1984. Non-performing loans rose from 14.2 percent to 25.3 percent of outstandings over the 9-month period. Non-accruals were $128.8 million on June 30 and $280.9 million on December 31, while allowance for loan losses rose from $29.3 million on December 31, 1984, to $51.0 million on September 30, 1985.

Production Credit Associations had an estimated $2.4 billion in non-performing loans on September 30, with $897.2 million in non-accrual status. On June 30, they had $2.0 billion in non-performing loans, of which $678.6 was non-accrual. On December 31, 1984, they had $2.1 billion in the non-performing category, of which $636.6 million was non-accruals. Non-performing loans among Production Credit Associations, therefore, went from 11.4 percent of outstandings on December 31, 1984, to 12.2 percent on June 30, and were estimated to be 14.6 percent

on September 30. Loan losses of Production Credit Associations totaled $285.9 million for 1984 and $359.1 million for the first 9 months of 1985. Their allowance for losses was $491.2 million on December 31, 1984, and $348.7 million on September 30, 1985.

Because of the problems facing the system and because there seems to be no prospect for a near-term turnaround in the agricultural economy, it has become apparent that the Farm Credit System will require Federal financial assistance if it is to remain a viable lender to American agriculture.

Though that premise has been questioned by some, the Farm Credit Administration has proposed legislation seeking such assistance. To help ensure that any financial assistance by the Government would be wisely used and that the system first would make the most effective use of its own resources, two other elements have been incorporated in the legislative proposal.

The first would grant enhanced enforcement authorities to the Farm Credit Administration; authorities that are essential if the agency is to properly carry out its role as a Federal regulator of financial institutions.

These enforcement authorities would include:

1. The power to issue cease-and-desist orders to prevent or stop unsafe or unsound practices or violations of Federal law or regulations;

2. The power to levy civil money penalties against those who violate the law, regulations, or provisions of final orders; and

3. The power to remove or suspend officers and directors of system institutions for cause.

Any of these actions, of course, would be subject to a hearing and a judicial review in a Federal court.

The Farm Credit Administration also intends to reassume direct examination and regulation of Federal Land Bank Associations and Production Credit Associations in addition to carrying out those functions at system banks and service organizations. Only by conducting these examinations itself, can the agency ensure the safety and soundness of system institutions.

To further this goal, the agency has already promulgated regulations that mandate full disclosure of the financial condition of each system institution to its stockholders. Disclosure information would also be submitted to the Farm Credit Administration where it will be available for public inspection. Also mandated in the disclosure regulations are the use of generally accepted accounting principles and the certification of financial statements by public accountants.

The second proposal provides for the system to make full use of its own resources through statutory authorities governing the Farm Credit System Capital Corporation. The capital corporation was created earlier this year as a centralized repository for troubled loans of problem banks within the Farm Credit System. The capital necessary to support the corporation's purchase of non-performing loans has been provided on a voluntary basis by all system banks.

The proposed legislation would re-charter the capital corporation, expanding both its role and power, though it would be closely controlled by the Farm Credit Administration and have a very narrowly defined focus for working out troubled loans.

The capital corporation would purchase distressed assets of any system bank or association. It would have the power to assess other system institutions to fund and support its workout efforts.

Centralizing the system's distressed assets will serve a number of useful functions for the system itself, for rural communities, and for troubled borrowers. The capital corporation will have significantly more staying power than an individual bank or association, which could translate into a broader range of options for troubled borrowers.

The Farm Credit Banks are tied together through the joint and several liability each institution has for the debt instruments issued by the others, so the long-run benefits of a skilled workout group and a centralized holding facility are easy to demonstrate.

The concept of a centralized pool for troubled assets and workout arrangements is by no means unique to the Farm Credit System. Such an arrangement is currently in the works for the Federal Savings and Loan Insurance Corporation and has been proposed for the Federal Deposit Insurance Corporation.

With the protection afforded to investors, borrowers, and the public by these two proposals, the Farm Credit Administration has asked that a backup, revolving

line of credit of $5 billion be made available to the Governor of the Farm Credit Administration. This credit line would be used only when the system had fully mobilized its own earned equity and loss reserves. It seems likely that the system will use nearly all its risk funds in meeting costs associated with its problem loans. This will represent a full commitment by the system to deal with its own problems before turning to the Government for help.

The agency believes this assistance program is responsive to the real needs of the Farm Credit System. It is also responsive to congressional concerns about the budget deficit. Given the enormity of the problem, it is relatively austere and demands considerable discipline and a high level of performance on the part of the system.

The program emphasizes self-help through the consolidation of the system's own resources backed by a Federal line of credit. The non-performing assets of system institutions would be purchased by an expanded capital corporation, thus strengthening the balance sheet positions of those institutions and relieving them of servicing problems connected with those loans. Then, every effort would be made on the basis of sound business decisions to work out the loans through restructuring, reamortization, and other loan-servicing treatments to turn nonperforming loans into performing loans. Liquidation of loans would occur only as a last resort.

Having workout specialists deal with these loans on a case-by-case basis would, the FCA believes, improve the prospects of keeping property in the hands of farmers and reduce the amount of land being sold under distressed circumstances. That should help to bring stability to farm real estate values and other farm assets.

And having tougher Federal regulation and examination of the system would help ensure the problems would not recur.

Stronger system institutions, unencumbered by non-performing and non-accrual loans, would have a favorable impact on the financial markets and on farm borrowing costs. Evidence of Federal support would enhance the system's ability to borrow loan funds at reasonable rates.

Farmers, investors, the financial community, and the public all have an enormous stake in the future of the Farm Credit System and the unique credit services it provides to America's largest industry. Prudent public policy decisions, coupled with determination by system institutions to weather the current difficulties, should ensure farmers of continued access to the credit services they require.

AGRICULTURAL CREDIT OUTLOOK - AMERICAN BANKERS' PERSPECTIVE

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I agree with the assertion that appeared in the November 11, 1985 issue of Fortune magazine..."intelligent handling of the farm credit situation is likely to be the greatest challenge in agricultural over the next few years." Furthermore, the outlook for agricultural credit will be determined by how effectively bankers, borrowers and policymakers can combine fundamental credit principles with the new realities of today's dramatically different agricultural and banking industries. Our most immediate challenge is to carefully balance short-term programs for those ag borrowers and banks who are legitimately calling for assistance with long-term policies that ensure that those who are now financially viable are not pulled down in the process.

At the risk of sounding simplistic, I want to preface everything with the basic premise that only a profitable agriculture will be a bankable agriculture over the long run, regardless of the extent of short-term emergency credit programs that may be instituted. While this seems elementary, many efforts in both the public and private sectors continue to be aimed essentially at expanding debt obligations for that segment of the agricultural industry that currently is leveraged beyond reasonable repayment possibilities. While I'm not suggesting that this segment deserves no assistance, I do submit that additional credit will only magnify its problem and perhaps worsen industry-wide conditions. I further suggest that these efforts attack the result, rather than the cause, of our problem--declining profitability.

I don't necessarily subscribe to the correlation between today's depressed farm economy and that of the early 1920s preceding the Great Depression. However, I do see a real danger in the general public's and government's complacency and their "they'll take care of themselves as always" attitude toward agriculture. Agricultural clearly is not just experiencing the usual liquidity problems associated with the traditional cycles of the farm economy; it is undergoing fundamental structural changes that are resulting in a truly excessive level of insolvencies. As a result, short-term bank-aid approaches will do more harm than good. Fundamental redirections that are consistent with the new realities for agriculture are demanded in both the public and private sectors. Moreover, although many are in need of immediate relief and the fundamental changes I am suggesting will no doubt take time, the longer we wait the higher the ultimate mortality will be.

The new realities have been well publicized. First, we are all aware by now that today's agriculture is internationalized, vertically integrated into an "agricultural complex," and more subject than ever before to influences outside the individual's direct control. Moreover, a recent survey of Midwestern

bankers reveals that bankers are increasingly worried about Main Street business failures exceeding farm failures. What a mistake it would be to restrict our analysis and policies to farm producers!

These are realities with which we all must deal in terms of planning and decision-making not only for prosperity, but for our economic survival! In other words, all of our policies, plans and decisions must (1) be global in scope, (2) involve new coalitions with everyone in the agricultural complex, and (3) be effectively processed through the political system if agriculture is to return to profitability and bankability.

It is important to note here that, despite the obvious problems related to excessive debt servicing demands, the need for capital is greatest when the cost/price squeeze is at its worst. Only through capital investment, new equipment and new technologies will we continue to be more efficient and competitive. The key here is that the capital must come with a proper balance between debt and equity. And both the amount and cost of equity, as well as debt capital, are directly associated with uncertainty. Thus, the only way capital markets will again turn to agriculture is if we can provide substantive proof that long-term strategies, policies and plans, vs. short-term cosmetic bank-aids, are being put in place.

Regarding efforts to return agriculture to profitability, and thereby make it more bankable, most economists agree that a move to a free market approach of price determination for farm products would cause agricultural incomes and would asset values to fall in the short run. But in the long run, incomes and asset values rebound and provide greater strength and stability to agriculture. Nonetheless, the financial problems for many in agriculture are so severe that a quick move to the free market approach at the present time is neither desirable nor politically feasible. Consequently, although bankers appreciate the long-term need for recapitalization in agriculture, we also recognize the reality that borrowers, lenders and policymakers must have mechanisms to buy time while dramatic adjustments are made.

It is important here to underscore the reality that bankers and farmers face the same set of problems. As the situation worsens, it becomes increasingly difficult for banks to guarantee the soundness of their institutions and meet the requirements of regulators while continuing to meet the credit needs of farm customers. Moreover, absent some indication of a return to profitability for agriculture, 1986 and beyond could will see lenders with the strongest financial resources, and resultant higher flexibility, changing their focus to other industries or, at best, pricing loan accommodations for farmers commensurate with higher risks, thereby worsening farm cash flow problems.

Next is the reality that there indeed is a growing inventory of farm property being held by lending institutions and awaiting sale. Consequently, without dramatic improvement in agriculture's ability to generate cash flow, recovery in the farm financial picture will be gradual at best as these properties overlay the market.

The next principle that often is overlooked is that, as severe and pervasive as the farm profitability and farm credit problems seem to be, they are not shared equally by borrowers or lenders. The USDA reports that 54 percent of our farmers have no apparent financial problems while the remaining 46 percent vary from serious to technically insolvent. It is in the disparity between the financial conditions and needs of individual farm borrowers and banks that the frustration and challenge of constructing meaningful farm policies and individual bank policies lies. Moreover, it seems likely that the disparity will widen because the rate of technological change in both agriculture and banking will continue to accelerate, as will the rates with which those technologies are adopted. Consequently, we cannot generalize as to the ultimate combination of who will be doing business with whom in the farm financial picture of the future.

The message is clear: bankers and farm policymakers must adopt flexible plans, policies, and business decisions that will allow individual operations to be addressed on a case-by-case basis. The dedicated and capable ag lender of the future will forced to adopt this flexibility. The major uncertainty revolves around how quickly we make the political process work to render the same flexibility in farm policy. Indecision in this fundamental area can only increase the cost and reduce the availability of prudent farm credit.

Another reality is that deregulations of the U.S. banking industry, dramatic new banking technologies, as well as competition from new entrants (both foreign and domestic) into our financial services industry, indicate that, just as in agriculture, there will be a widening disparity between dedicated, progressive and capable agricultural lenders and those who continue a "business as usual" approach. The agricultural businesses that are surviving today and appear to stand the best chance for survival in the future are on the leading edge of technology and will be increasingly demanding of high quality, dependable and innovative banking services. Already, the term "creative financing" is becoming commonplace and yielding such things as shared appreciation mortgages and deeds-in-lieu-of-debt with lease-back and re-purchase options.

The differentiation process is already occurring. While many U.S. banks are concluding that they are no longer interested in making farm loans, others are demonstrating: (1) the essential long-term dedication to agriculture; (2) a willingness to be especially innovative and creative on behalf of farm borrowers; (3) the capacity to provide farm customers with timely information for their financial decisions and (4) a willingness to join with farmers in assuring the political process is responsive to agriculture's unique needs. Thus, it will be earlier for the farm borrower to identify capable and committed ag bankers in 1986 and beyond.

The next important principle is that the problems of the Farm Credit System which currently are receiving so much publicity are clearly symptomatic of deeper structural conditions confronting the entire agricultural community and consequently the financial problems of commercial banks are almost identical in nature to those of the Farm Credit System's. Therefore, it is essential that agricultural borrowers from other institutions have the same opportunities for

assistance as borrowers from the Farm Credit System, not only for fairness, but to avoid a migration away from lending to agriculture by those institutions. Likewise, borrowers who feel they are being penalized by doing business with particular lenders logically will attempt to move at a time when those lending institutions to where they try to move are having difficulty servicing their existing portfolios. Clearly, neither commercial agricultural banks alone nor the Farm Credit System alone can provide for all farm borrowers. Our California situation underscores the importance of non-discrimination between borrowers by virtue of the institution with which they do business. In California for example, five large banks account for 82 percent of our state's commercial bank agricultural loans. These borrowers obviously must be included in any assistance package as well. We need all the resources we can muster to provide the quantity and quality of credit agriculture needs to survive these difficult times.

To marshal our resources, old barriers must be broken. No longer can we afford the traditional conflicts between (1) the private and public sectors, (2) bankers and borrowers, and (3) the Farm Credit System and commercial banks. Our human and financial resources and energies must be direct instead toward competitors outside our national borders.

Legislation surrounding ag banking transactions is an excellent example of the need for improved communication and cooperation. For example, recent experience indicates that banks can expect that legislative efforts will continue to be directed toward providing producers, suppliers, and buyers of farm products with unrecorded priority lien positions without realization as to how the availability and quality of credit will be restricted to those who need it most.

With these givens, along with the general assessment that the new farm bill will essentially "more the same," let me turn to a "most likely" scenario for the farm credit outlook in 1986 and beyond.

While agriculture's double squeeze of high interest rates and low commodity prices is not likely to worsen, and may in fact improve for some sectors in the coming 12 months and, absent some type of intervention, asset values and farmer net worths will continue to decline in most areas. Obviously then, secondary support for ag loans will continue to erode and place added strain on the capital structure of both farmers and farm banks.

Turning to the banking community, while pressures from stockholders and depositors may lead some bank managements to turn away from lending to agriculture, those that remain will increasing differentiate between farmers who do, and those who do not, have risk-carrying capacity, proven risk-management skills and sophisticated information systems that enable them to provide continuous and dependable financial and cost-accounting information to their bankers. Moreover, the dynamics of today's deregulated banking environment dictate that bankers more closely correlate loan pricing to risk and cost of administering individual credits. Therefore, those farm borrowers who can satisfy these conditions can look forward to more favorable pricing of their loans than those who cannot. Neil Harl's recent work, titled "the

Financial Crises in U.S. Agriculture," in combination with Emanuel Melichar's October 23, 1985 statement on the "Agricultural Banking Experience," clearly demonstrate the impressive forebearance shown by all farm lenders during the last very difficult five years and present convincing arguments for federal intervention to check the rate of financial deterioration in the farm and farm-related sectors. I'm confident we can count on continued forebearance within the boundaries of reason and prudence. But first, bankers and borrowers are searching for long-term direction upon which reasonable projections can be made. Only then can short-term assistance enable us all to properly position ourselves and our businesses while we exercise acute judgment in carefully identifying those borrowers who, with a little more forebearance, can make it. And, whether we prefer it or not, the initial direction must now come from Congress and the Administration.

In that regard, our American Bankers Association Agricultural Bankers Conference, held in Dallas the week of November 11th, reiterated the commercial banking industry's strong dedication to serving agriculture in every way possible. Our association has just committed substantial funding to a major research project devoted to assessing and improving the banking community's servicing of agriculture's financial needs. Among other things, the study will assess (1) the future structure of the agricultural sector, (2) major trends in ag banking, and (3) policy issues affecting agriculture and agricultural banking.

In the process of commissioning this study and gathering with fellow ag bankers, I was impressed with the positive and pragmatic direction our industry has taken in servicing the financial needs of agriculture. As a result, I'm convinced that agriculture and ag banking will respond as they always have ... with ingenuity, dedication and plain hard work.

But we'll clearly need assistance from the public and government. One area in which we must work together is the development of a mechanism to provide prudent long-term real estate loans for agriculture. Clearly, almost total reliance upon the Federal Land Bank has proven to be unhealthy for agriculture, banking and the Farm Credit System as well. All ag lenders must have a long-term loan product which will enable them to approach farm credit with the essential long-term orientation that is so essential for prudent financing of agriculture.

So let me pull things together by emphasizing that, despite today's discouraging economic situation on the farm and the pessimism that not exists, I am convinced there is reason for hope.

First is the positiveness of a recent Gallup poll regarding agriculture's image in the non-farm sector. Closely related is the proven, albeit painfully slow, ability of our political system to respond once the voting public recognizes the need. Clearly, the need for maximum attention to the farm problem is critical. But I'm convinced that, once it occurs, our system will respond.

Then, it is indeed surprising how well U.S. farm exports have held up given the magnitude of the appreciation in the dollar's value and the sluggishness of

international economies. While the five leading exports of the Japanese are manufactured goods, the top five American exports continue to be agricultural

products. U.S. agriculture will carry on its tradition of maximum productivity once budget deficits, the value of the dollar, and interest rates become more supportive.

In addition, private U.S. companies now are placing a much higher priority on exports than they did a decade ago, and U.S. agriculture's reputation for providing the highest-quality products, which is so critical to success, is unquestioned. Even though much remains to be done, I feel the biggest advances will, as always, come form private sector initiatives.

The dilemma faced by U.S. agriculture today is a classic example of the old adage "for every complex problem there is always one simple answer... and it is always wrong." This means that success will only come from a balanced approach ...balanced between private sector initiatives which are always the most productive, and government assistance only in the areas where it is absolutely essential. In the process, new partnerships must be formed between borrowers, bankers and government for the betterment of all, and most importantly, for the survival of agriculture, our most vital industry.

In summary, the current agricultural credit situation is more challenging and foreboding than most in the business today can remember. Moreover, 1986 will no doubt see further recapitalization and related adjustments for both agriculture and ag banking. Nonetheless, the commitment and forebearance shown to date, in combination with a dedication to developing new partnerships and techniques consistent with today's new realities, should give us confidence that agriculture will obtain adequate and prudent credit in the future.

THE 1985 FARM BILL: WILL AGRICULTURE BENEFIT?

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I appreciate the opportunity to speak before the Outlook Conference and hopefully will provide some perspectives on the implications of future farm policy, particularly as it relates to the 1985 Farm Bill.

However, before I discuss the policy outlook for agriculture, I believe it is important to discuss the economic setting under which the 1985 Farm Bill has been considered and the Administration's objectives regarding future farm policy. In addition, I think it is important to review the deliberative process that has occurred to better understand the reasons for the policy differences that have overwhelmed its progress. Finally, I will try to provide a scorecard of what kind of farm policy we are likely to end up with and its impact on the future of agriculture.

Economic Setting

The 1985 Farm Bill has been considered under the most difficult of economic circumstances. Land values, particularly in Midwest and Corn Belt states have experienced a dramatic decline, in some cases, offsetting the appreciation that occurred in the late 1970's. Since 1981, a deflationary transition has occurred throughout the economy with inflation rates dropping from double-digit levels to the current 3 to 4 percent. However, interest rates, while down significantly from 1981, are still high, primarily because of large budget deficits.

For farmers, interest paid on debt has become their largest cash expense, totaling $22 billion alone in 1984. Farm debt has risen from $130 billion in 1980 to $212 billion in 1985. As a result, some of our farmers are facing serious income and cash flow problems.

Earlier this year, the Congress passed emergency credit legislation, claiming that up to 20 percent of the farmers would be unable to obtain adequate credit to plant last spring's crop. As you know, that legislation was vetoed. Prior to the veto, however, the Administration expanded credit relief measures that were initiated last fall and most farmers were able to receive adequate credit. In fact surveys taken last summer showed that about only 3-4 percent of our Nation's farmers were unable to receive adequate credit -- far below the gloom and doom scenario painted by the media just 3 months before.

It is important to put into perspective who is and who is not in financial trouble. Approximately 12 percent of our farmers are experiencing financial distress with debt to asset ratios of 40 percent or more and have negative cash flows. However, some 1.5 million farms or 88 percent have debt to asset ratios of less than 40 percent and have positive cash flows. This is an important statistic in light of the dominant role the farm income issue has played in the 1985 Farm Bill deliberations. The farm income/debt issue took on added importance as it became apparent late last summer that the condition of the Farm Credit System had deteriorated. Many legislators responded to the deteriorating income/debt situation by supporting proposals which froze income supports for the life of the 1985 Farm Bill. This action was taken despite the fact that it is well known that a vast majority of our deficiency payments go to farmers who are not in financial trouble. In fact, in 1984, only 17¢ out of every dollar in deficiency payment went to farmers who were experiencing serious debt and cash flow problems.

Commodity prices have remainded depressed and have been further exacerbated by large carryovers from this year's crops. With the exception of corn, our ending stocks will likely be above the levels experienced prior to the implementation of the PIK program in 1983.

Exports of agricultural commodities have fallen sharply -- down from a peak of $43 billion in 1981 to $32 billion this year. The volume of U.S. agricultural exports has fallen from its peak of 163 million metric tons in 1980 to 126 million metric tons for 1985. Continued high Federal budget deficits, the high dollar and farm policies which have priced our commodities well above market-clearing levels have devastated not only farmers, but the agribusiness sector as well.

All of these conditions have provided the economic setting for consideration of the 1985 Farm Bill. Indeed, it has dominated the tenure of the debate and heavily influenced the provisions that are included in the House and Senate versions which will go to conference this week.

Administration Objectives of the 1985 Farm Bill

In developing the Administration's position on the Farm Bill, Secretary Block began the dialogue in 1983 with an Agricultural Summit attended by farmers, agribusinessmen and consumers. The goal was to get the agricultural community and the Congress to focus on the need to develop a long-term market-based farm policy.

It was clear that the basic components of farm legislation -- nonrecourse loans, supply control programs and large government reserves -- had changed little in substance over the last 50 years. More importantly, many of these program tools have been unable to deal with the vagaries of the weather and changes in domestic and international economic conditions.

After much internal debate, the Administration developed the following objectives for the 1985 Farm Bill:

1) Long-term Agricultural Policy. There is a need to create a policy environment that would clearly define what role the Federal Government is going to play in the agricultural sector over several years. Such a policy should allow farmers to make realistic investment and production decisions.

2) Market Orientation. Establish commodity price supports that will allow export-dependent commodities to become competitive in international markets.

3) Orderly Transition. There is a need to provide a transition period from our current programs to more market-based programs in order to allow farmers to adapt to these changes and decide how to manage their operations most effectively in a new environment.

4) Consistency. Under current legislation, the program for each agricultural commodity bears little relationship with the others. In addition, trade, conservation, credit, research and grain reserve policies have been working at cross purposes with our commodity programs. There is a need to integrate the objectives and provide consistency among commodity programs with other agricultural programs and policies.

5) Equity. At the end of the transition period, all producers would be put on an equal footing, by providing the same relative level of income and price support.

6) Fiscal Restraint. In a period of high budget deficits and an inability to control Federal outlays, it is necessary to exercise some fiscal restraint and remove the entitlement nature of agricultural policies and programs. The 1981 Farm Bill was projected to cost between $11-12 billion; in reality it has cost over $53 billion to date.

It was these objectives that were encompassed in the Administration's Farm Bill proposal, the Agricultural Adjustment Act of 1985 (AAA). It also marked the actual beginning of the 1985 Farm Bill process.

Farm Bill Process

While the enactment of the 1985 Farm Bill is still not yet a reality, it is educational to understand what has happened thus far and indeed how it will likely influence the final outcome.

As I just mentioned, the Administration forwarded its farm bill proposal to the Congress in February. In retrospect, I honestly believe the package we sent to the Congress was a tactical error on the part of the Administration. Let me state at the outset that the objectives of the proposal were sound and still are today. But the proposal contained provisions that were draconian. As an example, under the AAA the 1986 target price for wheat would have been

established at $3.41 per bushel versus $4.38 per bushel under current law. In addition, under the AAA, the dairy price support program was converted to a direct payment program which received little more than passive attention from those interested in dairy policy.

As a result, the provisions were neither politically or economically feasible given the conditions that existed in the agricultural sector. Thus, the AAA was indeed dead on arrival and it effectively dealt the Administration out of much of the Farm Bill process. The draconian nature of the policy reforms first proposed in the AAA have hindered our effectiveness in being a player during the farm bill process. However, we have once again become an integral part of the process because conferees clearly want to know what the Administration can accept in order to have a farm bill signed into law this year.

Once the Administration's proposal was put aside, a plethora of proposals were considered in both Committees. Throughout the deliberations, the Congress attempted to deal with what I would view as three conflicting goals at the same time -- maintaining farm income; enhancing our export competitiveness and reducing farm program outlays. The major theme throughout the debate has been maintaining income supports. The House-passed version froze target prices for five years while the Senate has passed effectively a two-year freeze in income supports.

Freezing income supports in order to maintain farm income is, at best, an ill-fated tool. Only 20 percent of total U.S. farm production is directly supported by direct government payments. In 1984, less than half of the financially stressed farmers participated in any commodity program. As a result, less than 20 percent of all payments went to financially stressed farms that relied primarily on farm income for their livelihood. Yet, some in Congress continue to contend that simply freezing target prices is a major sacrifice.

On the other hand, the Congress has displayed foresight by providing flexibility in dropping loan rates and allowing the U.S. to regain its competitiveness. I believe that this will, in the end, be the most important policy reform contained in the 1985 Farm Bill.

However, by attempting to protect farm income, while at the same time, moving to become more export competitive, we have severely compromised the third goal of employing additional budgetary controls on farm program outlays. By lowering support prices, and thus market prices, and at the same time maintaining high income supports, we will be providing larger deficiency payments in 1986 than we did in 1985. Faced again with large potential budget costs, the Department will be forced to run large acreage reduction programs.

Congress, in my estimation, avoided many of the tough political and economic decisions by giving the Secretary the discretionary authority to reduce loan rates by up to 20 percent and then requiring a marketing loan below that, all of which is outside the $50,000 payment limitation. Congress clearly did not want to be held responsible for mandating lower prices.

Given the current structure of farm legislation in both the Senate and House-passed bills, government outlays for the next three years alone will range from $50-60 billion. Again, a large portion of the budget exposure will be in the form of direct income transfers to producers. This is well above the $35 billion for farm programs that was contained in the FY' 86-88 Congressional Budget Resolution.

Frankly, I believe we are kidding ourselves if anyone believes that we will be able to constrain program outlays in the range of $50-60 billion over the next three years. As long as price and income supports are tied to production, we are at significant risk to additional budget exposure. Why do I say that? If we think of what has been happening with increased yields and productivity over the years with our major program commodities -- wheat, corn, rice and dairy -- it is not inconceivable that costs could increase dramatically. For instance, if commodity yields and milk production per cow increased 10-20 percent, we could easily see a scenario where farm programs could cost $70-80 billion over the next three years.

I think it also important to recognize the impacts of commodity interests in this farm bill process. Once again, individual commodity groups have exercised a large degree of influence. In addition, there were new players on the block during this farm bill. Input suppliers, primarily fertilizer, farm machinery, seed and agribusiness have recognized the implications of farm policy on their industries. Livestock organizations have also become more heavily involved, spurred on after a dairy diversion program was signed into law in late 1983. But in the end, most of these organizations had little impact on the major farm policy issues that have been debated. Agribusiness has been, quite frankly, the biggest disappointment particularly in light of the stakes they have in the outcome of the farm policy debate.

In the end it has been the commodity groups that have continued to dominate the type of policies that are embodied in both the House and Senate versions. In some instances, this has led to major policy reforms. However, a number of provisions were included in the House and Senate bills at the urging of various commodity groups that made little economic, political or bugetary sense. Let me cite just two examples. Rice interests were able to get a provision in the Senate bill which converts the $8.00 per hundredweight (cwt.) loan for the 1985 crop to a marketing loan. This means that rice producers will receive a $3.90 per cwt. deficiency payment for the 1985 crop that is subject to the $50,000 payment limitation. In addition, they will be eligible to place their entire crop under loan at an average price of $8.00 per cwt. and repay the loan at the prevailing market price, which will likely be below $5.00 per cwt. Producer compensation under the marketing loan provision is not subject to the $50,000 payment limitation. It is interesting to note that when Federal government assistance for the rice industry in the form of loans, deficiency payments and export financing is added, it is projected to more than equal the value of the 1986 rice crop.

The soybean program, once the model of unfettered government interference has now succumbed to the pressure for direct government payments. Realizing the gains that other commodities were achieving during the farm bill debate, soybean interests figured it was time to reverse their longstanding policy of limited government involvement in the soybean industry. Thus, for the first time, provisions were included in the Senate version of the farm bill that requires the Secretary for the 1985 crop to provide payments to producers holding loans or who are eligible to receive them, of $35 an acre as long as they forgo receiving a loan or forfeiting their loan. And if they do repay within 60 days, the interest on the loan would be forgiven. However, if the producer felt $35 an acre was not somehow "equitable" he could opt to receive a $1 per bushel payment based on his actual yield per acre.

In both of these examples, the priority is to protect farm income -- protection that is not without costs. The marketing loan provisions and commodity in-kind payments alone will add $400 million to the cost of the rice program; the cash payments made under the soybean provisions will add another $400 million to the total soybean outlays.

Finally, the political setting has played a major role in the farm bill process. It is no secret that next year at least a dozen Republican farm state Senate seats are up for re-election, which will be directly impacted by the outcome of both the farm bill and the farm credit debate. Obviously, the stakes are high as continuation of a Republican majority of the U.S. Senate could be in jeopardy.

As a result, politics has contributed to the lack of policy reforms achieved during the 1985 farm bill debate. Throughout the year the debate has been partisan and acrimonious. We went through a long process in Committee, particularly on the Senate side. Chairman Helms was constantly having to battle obstruction of Committee mark-up by some who used parlimentary procedures which effectively restricted the amount of time the Senate Agriculture Committee could meet in mark-up sessions. And despite the fact that the Committee had a Republican majority, there was constantly defection among party ranks on key votes. Senator Robert Dole, who is Majority Leader as well as a member of the Senate Agriculture Committee had, along with Chairman Helms, the unenviable task of trying to sheperd a Farm Bill through the Senate. As a result, the farm bill has become a 1986 campaign issue, not just a farm policy issue.

Farm Bill Outcome

Given that background, I will attempt to provide a prognosis of the final outcome of the Farm Bill. After all the debate and consideration, I believe it is important to see where we will likely end up out of this process and what impacts it will have on U.S. agriculture. I would like to compare the outcome with the Administration's objectives and use that as a guideline.

As you recall, our first objective was a long-term policy. I believe the final bill will contain provisions authorizing farm programs for four or five years. But I do not believe it will evolve into long-term agricultural policy. To quote from a recent article by columnist Robert J. Samuelson, we are "continuing current policies, which create windfalls without providing relief. The details, not the philosophy of farm policy are being changed." While we have made some strides in specific areas, we have increased not lessened the presence of government involvement in agriculture. The approaches taken in both the House and Senate versions of the Farm Bill are going to result in more not less farm program participation. For example, over the last 20 years participation in wheat programs has averaged 65 percent of all wheat producers; 48 percent in feedgrain programs; 80 percent in cotton and 83 percent in rice programs. Thus, not all producers have traditionally participated heavily in these programs.

However, in recent years, due to low prices and very attractive farm program benefits, participation in farm programs has grown dramatically. For instance, the world price for rice today is less than $5 per hundredweight, yet U.S. rice producers participating in the 1985 rice program are guaranteed $11.90 per hundredweight for their production. By lowering price supports, and thus market prices, and at the same time maintaining high income supports, the legislation proposed by the Congress will establish programs for wheat, corn, cotton and rice in which producers would have no rational choice but to participate. USDA estimates the participation rates under the congressionally proposed wheat, corn, cotton and rice programs would likely average over 90 percent for crop years 1986-89. With so many having entered the 1985 Farm Bill debate with the proclaimed goal of making agriculture more responsive to market realities, these figures are telling.

What all this means is that the incentives to overproduce will continue, creating growing surpluses as high target prices send signals to producers to expand production and be rewarded for increasing yields. Foreign competitors will continue to increase production and market share while we cut back and store the surplus -- all at little cost to their taxpayers and producers. Budget outlays -- which because of weather, economic conditions and other factors are outside the control of either the Secretary of Agriculture or the Congress -- will continue to exacerbate our already burdensome budget deficits.

As I mentioned, we will likely make significant gains on the second objective -- market orientation. I believe we will be able to become competitive through the authorities of the so-called "Findley" amendment and marketing loan provisions.

However, freezing target prices will force the Department to run large acreage reduction programs in an effort to artificially increase commodity prices and minimize budget exposure. This could well lead to a situation where efforts to enhance our competitiveness through a reduction in loan rates is at least

partially offset through the price effects of running large annual acreage reduction programs.

It is clear that we have achieved little success in making our commodity and other agricultural programs more consistent. On the positive side, we will likely have some very meaningful reform in the conservation area with the establishment of a 25-40 million acre long-term conservation reserve. This will result in taking highly erodible land out of crop production for at least ten years, much of which was converted to cropland because of our existing commodity programs. In addition, "sodbuster" provisions are contained in both the House and Senate bills which will deny program benefits to producers who bring erosive land into crop production.

Regarding the transition period objectives, we will likely have provisions that will phase out acreage reduction programs over three to five years. I believe it is important to send producers both here and around the world a signal that we will no longer run supply management programs indefinitely. A phase-out of acreage reduction programs complemented with a long-term conservation reserve would begin to provide a transition to less government dependence. During this transition period, target prices will remain at fairly high levels while commodity loan rates will be dropped to market-clearing levels.

Equity, the next objective, will be a matter of perception under this new Farm Bill. Unfortunately, the gains that will likely be made by lowering support rates will be offset by use of marketing loan repayments, producer option payments, and the "Findley" provisions as they are all outside the $50,000 payment limitation.

One area that I have not touched on that deserves some attention is dairy. As you know, the House and Senate dairy provisions are considerably different. The House version contains a dairy diversion program and mandates the use of a cost of production index for establishing the dairy support price. The Senate proposes lower price supports beginning in 1987 as long as dairy surpluses persist.

The Administration is unalterably opposed to a dairy diversion program. It is ironic that at a time when we are attempting to make price supports for our other major commodities more competitve and move away from reliance on supply management programs, some are attempting to move dairy in the opposite direction.

Perhaps the worst aspect of the House proposal is the inclusion of assessments on dairy producers to pay for the diversion program. The Senate passed a resolution as part of the Farm Bill prohibiting the use of any form of assessments. The Administration will require a price support reduction in 1986 with no diversion program or assessments. I believe without these changes, passage of the Farm Bill will be in serious jeopardy.

There are several reasons why reduction in price supports is necessary, both in the short and long run. First, dairy producers must be able to operate in some form of a long-term environment. With over seven legislative changes made in the dairy title since 1981 and some producers expanding production in order to build up a base in anticipation of another diversion program, no such environment exists.

Second, despite the fact that the price support has been reduced three times since 1983, enterprise returns for dairying are still good or better than most likely alternative farm uses.

A third reason for lower support prices is this: lower general inflation, elimination of dairy assessments, lower feed costs and improved milk production per cow all are likely to result in lower average total cash expenses during 1985 than in 1984. In fact, the milk-feed price ratio, is currently very attractive at 1.5 to 1, well above the 1.3 to 1 ratio considered favorable for dairy farmers. And with huge carryovers of feed grains, soybeans and wheat and the apparent willingness of Congress to allow commodity price supports to be established at competitve levels, it is apparent that feed prices will be attractive for dairy farmers in the near future.

Fourth, it is clear that without any reduction in the price support level in 1986, the Government is certain to incur a record amount of surplus dairy products at a cost in excess of $2 billion.

Given the outlook for increased productivity per cow with technological breakthroughs such as bovine growth hormones, it is imperative that we begin to send economic signals to the dairy industry to respond to market conditions rather than artificial price supports.

The last major objective that the Administration sought was fiscal restraint and this objective will simply not be met under the 1985 Farm Bill. As I mentioned earlier, the current versions of the Senate and House bills will cost between $55-60 billion over the next three years. I believe that the final farm bill will be projected to cost between $50-55 billion. But as I previously stated, it will be virtually impossible to hold outlays at those levels assuming normal weather and economic conditions.

Future Farm Policy

While I believe that we will get a 1985 Farm Bill that will pass the Congress and be signed into law, the legislation will unlikely stay in place for more than a year or two. It most assuredly will be amended again because problems will overtake us. Just one example exposes the potential problems we face. With recent large production and stagnant domestic and export demand, grain stocks are currently presenting serious grain storage problems. If we have just a normal crop next year, stocks will grow beyond levels we faced prior to the implementation of the PIK program.

Nonetheless, the Secretary will implement farm program provisions as soon as the new Farm Bill is enacted. We will announce the 1986 programs within days after enactment of the new bill, which will clearly show our commitment towards becoming competitive by dropping loan rates to market-clearing levels. We will implement a conservation reserve and take erodible land out of production. We will use all authorities available to insure that we do not short the market by tying all of our stocks in government programs. However, with the production incentives contained in the House and Senate bills, it will be extremely difficult to avoid potential problems in the short run.

I believe that our agricultural policy will never be effective until we develop commodity programs that clearly separate price and income supports from production decisions and move away from reliance on annual supply control programs.

Interestingly, such a proposal introduced by Senators Rudy Boschwitz and David Boren was considered during the Farm Bill debate. In summary, the Boschwitz/Boren bill dropped loan rates to market-clearing levels, eliminated target prices and provided for transition payments to producers, phased down over time.

I do believe that this approach coupled with a phaseout of acreage reduction programs and some other modifications is one that needs to be debated extensively and considered as a fundamental basis for our future farm commodity programs. We need to provide a long-term approach by showing our competitors that we indeed will remain competitive in international markets. At the same time, we will provide adequate income protection while allowing the marketplace to make the production and marketing decisions for our farmers and agribusinesses. This type of program can also address the burgeoning problem of huge farm program outlays. Under this approach, we have the ability to put parameters on our potential budget exposure. By divorcing price and income supports from production, we can more accurately measure how much money we spend for agriculture. More importantly, we can establish our priorities and target benefits to those most in need.

As I have stated a number of times this year, the Boschwitz/Boren transition payment approach was considered to be an idea before its time. But, I will predict that within two years under the 1985 Farm Bill, there will be a strong desire on the part of those involved in making farm policy for a new approach. I believe the transition payment approach offers the best hope of balancing the three goals of income protection, export competitiveness and budget restraint that the Congress and the Administration have tried so hard to achieve during this farm bill debate.

Don Paarlberg, Professor Emeritus
Purdue University

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Thank you very much, Mark, for that generous introduction, and Randy for your warm greeting. To many of you whom I've not had opportunity to visit with, I would like to extend a general greeting.

Now, I plan to make this presentation in a rather unique way. Instead of making a speech, I'm going to hold a press conference. And this is a unique kind of press conference because I'm going to ask the questions myself. I have the feeling that they will be a little more friendly than any other kind. So without any introductory statement, I immediately call for questions. Who has the first question.

Mr. Paarlberg, I have a question: You're supposed to discuss implications of the 1985 farm bill. How are you going to do that when we don't have a farm bill?

Well, that's not as hard as you might think. These are the days of simulation. Economists are simulating things, making models all around. When they don't have the facts, they simply simulate them. So I am going to simulate a farm bill and then I am going to discuss it.

What are the ingredients of this farm bill that you are going to simulate?

They are not greatly different from the dimensions that Randy Russell has spoken about and that Secretary Block spoke about this morning. We will have, I think, a farm bill that retains the target price concept; that freezes them for a time, then gradually reduces them; that drops the loan levels; that grants discretion to the Secretary for doing so; that has in it some authority to reduce output; that has in it a conservation provision; and I think there will be, maybe not in this bill but associated with it, perhaps later, some provision for meeting the financial stress in agriculture. Those I think are the main dimensions for the farm bill and that's the bill that I am simulating.

Mr. Paarlberg, will such a bill be capable of being signed by the President?

Well, of course, sir, I can't speak for the President, but I think that in the negotiations on this farm bill there will be dialogue between the two Houses, between leadership of both parties, and between the executive and the legislative branches. I think that a bill will emerge in conference that can be passed by the two Houses and can be signed by the President. I think the Congress wants a bill. I think they want to be perceived by the public as

having addressed this subject and come up with some piece of legislation. I think the executive wants a farm bill. I think the alternative is no farm bill and that means a return to the Agricultural Act of 1949 which is 35 years old and was out of date when it was passed. It would be enormously expensive and difficult to administer and has in it all kinds of authoritative provisions that run counter to what the executive wants.

Mr. Paarlberg, do you think that such a bill will alleviate the farm crisis?

A short answer is no. And let me say that I dislike this word farm crisis. What we have is a very severe financial stress for a particular group of farmers. The notion that the whole of agriculture is in crisis is an idea being peddled by the farm lobby and picked up by the public and repeated by the media. The farm lobby has become quite successful in getting that notion accepted. That is not true. The particular difficulty is with those farmers who got deeply indebted during the euphoria of the 1970's and then ran into the counterinflationary policies of the 1980's. Depending on how you measure it, they are 10 percent, 15 percent, 25 percent of all farms. The others are in some difficulties. They are taking in their belts and they are going to make it. But it is not a general farm crisis nor does the farm legislation that is now being shaped address the whole of agriculture as Randy Russell so clearly said. So this bill will not alleviate the farm crisis or the financial stress for the particular farmers who are in trouble. As Randy said, the bulk of the farm payments go out to the producers of wheat, feed grains, dairy products, rice and a few other commodities. But two-thirds of agriculture is not covered by these programs and these farmers also have financial stress, certain of them. Of the money that does go out to farm program participants, only about one-third goes to people who have debt-to-asset ratios of 40 percent or higher and 15 percent of it goes out to farmers with net worth in excess of $1 million--hardly the poverty level.

I think the result of this farm bill is going to be, in short, that the administration will be able say there was a discernable change in direction toward market orientation; that the Congress will be able to say that it did act and produce a farm bill; that the lobby groups will be able to walk away with a bundle; that the Canadians will be the real beneficiaries. This bill should be called the bill for the benefit of Canadian agriculture. We hold a price umbrella for them, we make room in the market for them to sell their products. As a result of all this, I think these things will happen: costs will escalate, the deficit will grow and the agricultural situation will be very much as it was before.

Now, who has another question. Let's get off this particular subject. Well, here's another question, perhaps somewhat related.

If the Gramm-Rudman legislation to require a balanced budget in six years becomes effective, how would it relate to the farm bill?

First, I am not at all convinced that Gramm-Rudman is going to be passed by the Congress or if so, signed by the President. Or, if it were signed by the President that it would be respected in the actual administration. Congress may do as it has previously done to escape budgetary restrictions: simply rescind its action. Now the Congress has been doing this. For example, it set limits on the debt and then appropriated sums in excess of the limit and lifted

the debt. Just a few months ago, the Congress self-imposed a budgetary limit for agriculture which it is in the process of violating. It has done the same thing with regard to the pork barrel projects. To me as an observer out in the Midwest, the Gramm-Rudman thing is about transparent as a windowpane. And I have very little confidence that it will discipline the farm bill or any thing else. That's a private opinion, and you are welcome to it at no cost.

Well Mr. Paarlberg, what would it take to alleviate the financial stress in agriculture?

It would take macro-policy, not micro-policy. Now one of the illusions that agricultural people have is that they're self-contained thing. If they have any problem it originated in their area and if there is any solution to this problem, it's got to be also directly related to their area. Now the current problem of financial stress for a particular group of farmers comes not so much from things that happened in agriculture but as a result of macro-policy. The opened-handed policies of the 1980's gave us inflation; we doubled the amount of money in circulation; we doubled the consumer price index; we more than doubled the prices received by farmers; we held the interest rate down to negative levels; and farmers plunged, which is understandable with the expectation that that would continue. Then we suddenly got religion; we slammed on the brakes; we brought the vehicle back within the speed limit, but we threw the farmers against the windshield and some others as well. Anybody who sold in the competitive market and who was deeply dependent on borrowed money got in trouble: housing, agriculture, basic industries, what not. That is the problem. Now, if that is the origin of the problem it seems to me that the solution to it has to be in that same general area. And I have heard this again and again. I'm not arguing anything new, I have heard it from various people, including the Secretary.

We've got to discipline the budget; we've got to get the exchange value of the dollar down; we've got to get the real interest rate down. And I happen to think that we've got to have some reflation. I'll call it that. Reflation to restore price relationships that have become very disadvantageous to farmers. That's something that one could say only if he's retired and no longer bears government responsibility. Now let me point this out. We have an enormous debt now. Not just agriculture, but general throughout the United States. We have enormous and growing public debt. We have debts in the third world. When you have a debt that reaches an intolerable level, you can do one of two things. You can either scale down the debt to make it reconcile with the value of the assets or you can write up the value of the assets by inflation. And I think myself that this is likely to happen. I think there is a sufficient likelihood whatever the probabilities are, and you can assess them. My own feeling is that sometime in the next two or three years we'll see a renewal in inflation and a rising tide will lift all boats except those that are sunk. And I think this is going to be one way in which we reduce the enormous present burden of debt, public, private, farm, nonfarm, domestic and foreign.

O.K., who's got another question?

Why did you economists fail to foresee the hard times that were coming and warn us about them?

No comment; next question.

Well, I'm not going to let you off that easy. Here you have an outlook meeting; how good are these outlook statements? How much confidence should we have in them? What does the record show?

I have an answer of sorts to that question. Some years ago, I initiated a study to examine the outlook predictions of the Department of Agriculture and the actual events as they came about over a long period of years. We examined every prediction that really was a prediction. We had to throw out all those with weasel words, and that was a substantial number. After we had sorted out the ones that were authentic, we reckoned them against the actual event and we devised a scoring system, which would give 100 if they were all right, 0 if they were all wrong and 50 if the results were about the same as you would get by guessing. We reckoned all these up and the final score was 75: halfway between what you'd get by guessing and what you'd get if you had perfect knowledge. Now at Purdue University 75 is passing--just barely. And I submit that a score of 75 in the tough theatre where we're working here is not a bad score. If that past experience holds true today you can believe as fact three-fourths of what you hear at this outlook conference. Your only problem is to sort out which three-fourths those are.

Now Mr. Paarlberg, to elaborate on a point raised by Randy Russell, some 22 Republican Senators up for election in 1986. About a dozen are from farm states but there are 22 altogether. Isn't it necessary that there be an openhanded farm bill in order to reelect these people and for the Republican party to retain control of the Senate?

That is the myth that is floated out and defended by the farm lobby. I know myself of no imperical evidence that says that an openhanded farm program is going to elect senators or representatives. I am from Indiana--the heart of the heart of the Country. The people out there are interested in a lot things besides agriculture. They're interested in agriculture, but I don't think that's the first consideration of the voters in my state. They're concerned about the enormous deficit; they're concerned about the arms race, they're concerned about trade problems, they're concerned about terrorism and I don't see that the farm issue is as important to the voters I know as it is proposed to be by the members of the farm lobby. And every time we repeat that, we simply add to the credibility of the myth. I'm sorry you asked that question.

What about cargo preference?

Well, we have been fighting that issue for all the years I was here and for all the years since, and I don't know that we have made much gain in it. I'd be a little surprised if we were going to make much progress in this bill. I don't know--I'll pass on that one.

What about food stamps and what about P.L. 480?

We haven't talked very much about those things. I happen to think that food stamps and Public Law 480 have become institutionalized in recent years and that they will continue rather much as they have been with some minor tuning.

I'll take just one more question and then my time will be up.

Oh Mr. Paarlberg, how do things differ in the Department of Agriculture now from what they were like when you were here some years ago?

They're tougher, much tougher. The situation for farmers is much tougher. Administering the law, which is the special responsibility of the Department, is tougher. The political environment within which they have to work is much tougher. As I look back on it, my colleagues and I were here during the glory days and it is the present team that has the tough problem. I'm very happy we have a good, able dedicated team here to deal with these problems. Thank you very much.

Frank R. Gomme, Agricultural Marketing Specialist
Foreign Agricultural Service

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OUTLOOK '86

World Food Grain Situation and the Domestic Outlook

World food grain production in 1985/86, including wheat and rice, is projected at 971 million tons, down fractionally from the year earlier level but still the second largest on record. Taking into account large beginning stocks in a number of countries, food grain supplies may well be at an all time high.

Despite lower prices this year, particularly for wheat, food grain utilization is expected to slip from last year's record level. This decline is likely to be in wheat used for feed. Larger crops in a number of the major grain importing countries and continued economic problems have reduced world import demand for food grains to the lowest level since the late 1970's. Lower demand and prospects for a significant increase in already large stocks, have depressed world food grain prices and led to an extremely competitive grain market in 1985/86.

World Wheat Outlook

The principal features of this year's world wheat outlook are another year of large supplies, reduced utilization and imports, and an unusual amount of uncertainty overhanging the market place.

Total area devoted to wheat worldwide in 1985/86 at 230 million hectares was little changed from the somewhat reduced level of the past couple of years. However, yields continue their strong showing with average yields in 1985/86 second only to last year's record. Consequently, estimated production of 506 million tons is down only slightly from last year's record outturn.

WORLD WHEAT PRODUCTION

Country/Region	1981/82	1983/84	1983/84 Prelim.	1985/86 Proj.
		Million Tons		
United States	75.8	65.9	70.6	65.8
Australia	16.4	22.0	18.3	16.5
Argentina	8.3	12.8	13.2	12.3
Canada	24.8	26.6	21.2	22.0
EC-10	54.4	59.2	76.3	67.0
China	59.6	81.4	87.8	86.0
USSR	80.0	79.0	73.0	83.0
India	36.3	42.8	45.1	45.0
Others	92.8	101.3	108.1	108.7
Total	448.4	491.0	513.6	506.3

The Competition 1/

Area devoted to wheat in our major competitor countries for the world export market declined in 1985. This reflected in some cases a difficult planting season, a continued switch in area to other crops and possibly the effects of two year's of declining world wheat prices. With lower yields, total wheat production among the 4 major competitors dropped by over 10 million tons. Most of the decline was in the EC. Some of these countries also had sizeable stocks to draw on which will minimize the effects of the smaller crops.

From the standpoint of export outlook, these countries face differing prospects. For a quick review of the competition, let's start with Argentina. Area has trended downward since the 1982 peak when a crop of 15 million tons was produced. The current forecast suggests a 1985 crop of over 12 million tons, not too far below the level of the past 2 years. Early season export sales have been good. In fact, Argentina recently announced that registrations for exports would be limited to 4 million tons. This action may have reflected uncertainty about the level of export sales relative to available supplies and dissatisfaction with the level of world wheat prices. Argentina is expected to soon re-enter the export market but on a more cautious scale.

Area devoted to wheat in Australia for 1985 at 12 million hectares was little changed from that of recent years. Yields appear to be off somewhat from the good level of the past 2 seasons. The crop estimated at around 16 million tons would be well below the last two harvests. Despite limited news about new crop wheat sales, the Australian Wheat Board is expected to compete vigorously for its share of a reduced world wheat market. Australia's presence in the world feed wheat market is expected to be substantially reduced this year as reports indicate a good quality 1985 crop. In addition, supplies of general purpose (GP) feed wheat from the 1983 crop have been depleted.

Canadian wheat area at 13.7 million hectares continued quite large in 1985. However, mother nature struck a late season blow to the crop, sharply reducing the portion of the crop that falls in the 2 top grades. In recent years, 85 percent or more of the Canadian wheat crop normally grades CWRS No. 1 and No. 2. This year the percent of No. 1 and No. 2's may be closer to 45 percent. The crop is still projected at 22 million tons, somewhat above the year earlier harvest but well short of the 1982 record. Uncertainty about the availability of top grades prompted the Canadian Wheat Board (CWB) to announce in October a suspension of sales to non-traditional buyers. The month long shut-down of the Welland Canal may also affect Canadian export prospects for the 1985/86 marketing year. Although Canadian wheat exports are still estimated at a healthy 16.5 million tons, the Canadian Wheat Board's task of selling the 1985 wheat crop may be more challenging than usual because of the large supplies of feed quality wneat.

Exports to traditional customers of high quality wheat may not be much below recent levels as overall demand is likely down and the CWB may be able to dip into old crop carryover stocks which are thought to be principally high quality wheat. Many buyers of Canadian wheat traditionally purchase CWRS

1/ Includes Argentina, Australia, Canada, and the EC.

No. 3 of which there appear to be ample supplies this year. The big question is, will Canada choose to aggressively market this year's large supplies of feed wheat into a world market awash with coarse grains or temporarily move the feed wheat into stocks. If past experience is any indication, Canada will choose the export route as it did with the "special bin" freeze-damaged wheat 3 years ago.

The EC has harvested a crop of 67 million tons, the second largest crop on record. However, reports indicate that quality is somewhat below last year's outstanding level. This is particularly true in the U.K., where late season rains caused the quality of the harvest to deteriorate badly. Usually this would mean sales opportunities for producers of high quality wheat such as the United States and Canada. However, the EC has reacted to this year's quality problem by releasing bread wheats from large intervention stocks. After a slow start, the pace of EC export sales has accelerated sharply. By mid-November, export licenses had already exceeded last year's record level for the same period. The EC has stepped up its aggressive subsidized export programs in recent weeks, particularly with selectively higher subsidies to those North African countries targeted by the U.S. Export Enhancement Program. EC exports to non-EC destinations are currently projected to equal last year's record 17.5 million tons. Last year, the EC shipped over 6 million tons of wheat to the USSR or over a third of the total third country trade. Soviet wheat imports are expected to decline by nearly a third this year which would suggest some reduction in EC-USSR trade.

WORLD WHEAT AND FLOUR TRADE
July/June Marketing Year

	1983/84	Prelim. 1984/85	Proj. 1985/86
		Million Tons	
EXPORTS			
U.S.	38.9	38.1	27.2
Canada	21.8	19.4	16.5
Argentina	9.6	8.6	7.4
Australia	11.6	16.6	15.4
EC-10	15.4	17.5	17.5
Sub-Total	58.4	62.7	56.8
Other	5.6	8.0	6.6
TOTAL	102.9	108.2	90.6
IMPORTS			
EC-10	3.6	2.2	2.7
Mid. East & N. Africa 1/	14.2	14.1	13.2
Egypt	6.7	6.6	6.7
Mexico	.6	.4	.3
India	2.5	.2	.1
E. Europe	3.8	2.8	4.2
China	9.6	7.4	6.5
USSR	20.5	28.1	17.0
Other	41.4	46.4	39.9
TOTAL	102.9	108.2	90.6

1/ Algeria, Morocco, Tunisia, Iran, Iraq, and Nigeria.

World Wheat Import Demand Plummets

World wheat import demand in 1985/86, currently projected at around 90 million tons, will be the smallest since 1979/80. Thanks to improved domestic harvests, many of the world's wheat users will need less imported wheat in 1985/86. In fact of the 129 countries that USDA maintains comprehensive wheat data for only around a third are projected to import more wheat in 1985/86 than a year ago. Not only are wheat users importing less wheat for food use this year, ample world supplies of coarse grains may restrict the trade in feed wheat.

A few areas stand out in contrast to this picture of reduced wheat needs. Both Western and Eastern Europe are projected to increase imports in 1985/86. The need for imports of high quality wheat by West European countries to blend with domestically produced wheat should result in some recovery in imports from last year's exceptionally low level. Eastern Europe, faced with a significant short fall in production, is expected to have sharply increased import requirements.

But the more common story this year tells of smaller import requirements. The most dramatic development is the projected 11-million-ton reduction in USSR wheat imports from the record 1984/85 level. The Soviets were the main buyers of wheat from each of the major grain exporters in 1984/85. Consequently, lower Soviet imports this year have created a real scramble among the exporters for markets. The list of other major wheat buyers projected to buy less this year is long. It includes such prominent customers as China, Japan, Korea, Brazil, and the major Middle Eastern markets. Only part of this reduction can be explained by better crops, also a factor are changes in domestic policies towards imports and limited foreign exchange reserves.

Stocks to Rise to Record Levels

World wheat stocks at the end of the 1985/86 marketing year are projected to climb to a record 127 million tons, marking the fifth straight year that wheat stocks have risen. The stocks-to-use ratio, a relative measure of the world's ability to dip into reserves if the need arises, will be at its highest level since the late 1960's. The United States is expected to hold around 37 percent of the world's wheat stocks with our major export competitors accounting for another fourth.

Wheat Prices Recover from Lows

World wheat prices have been on a roller coaster so far during the 1985/86 marketing year. As harvest time approached in the Northern Hemisphere and crop prospects appeared generally good, wheat prices declined. By late summer, prices of many types of wheat were at their lowest levels since the 1978/79 marketing year. However, harvesting problems in the USSR, Canada, and parts of Western Europe provided some temporary strength to wheat prices in late summer. But the market place couldn't ignore the fact that world import demand was likely to be off sharply in 1985/86 and exportable supplies were abundant, prices again weakened. The announcement by the United States of its Export Enhancement Program also introduced some additional uncertainty into the world market place, as it now appeared that the U.S. loan program with its price support provision would not be providing the effective floor under world wheat prices as it had in the past. Many importing countries reacted to the

increased uncertainty and abundant world supplies by delaying grain buying schedules adding to market bearishness.

Low returns in the market place encouraged U.S. producers to put wheat into the price support loan program at a record pace. In addition, uncertainties and possibly dissatisfaction with returns from the export market encouraged Canada and Argentina to announce some limitations on exports. All of these factors have added some recent strength to wheat prices. Continued tightening of supplies in the U.S. market, as a result of heavy use of the loan program, could lead the way for additional strengthening in world wheat prices in the months ahead.

What Does the Future Hold?

The outlook for world wheat in the next crop year and in the years ahead is more uncertain than usual. Will U.S. wheat be produced and sold under a program that supports wheat at significantly lower levels than has prevailed in recent years? Will lower prices result in a significant expansion in world wheat demand? Will our major competitors react to lower potential returns in the wheat export market by reducing area or level of production inputs? Will the United States be able to recapture the export momentum of the 1970's or will we continue to see our position in the world wheat export market erode as has happened so far in the 1980's?

Historically, competitor exporters' production has shown a responsiveness to prices. This is significant considering that competitor countries do not generally stock grain and changes in production directly affect export trade. U.S. support levels in recent years have been incentives to foreign producers to expand production. It is likely that if these supports were reduced, competitor's rate of production growth (and therefore export growth) would slow down, as it had in previous periods.

Reduced supports could also go far in stimulating import demand. There is historical evidence that utilization in importing countries has fallen below long term trend during periods of rising prices and was above trend when prices declined. Also it stands to reason that importing countries having financial constraints could meet more of their growing import needs with the same amount of money if prices fell to market clearing levels. This spurt in demand would represent a permanent trade gain as countries reached and maintained a new plateau of consumption.

Both competitor and importer responsiveness will depend upon the extent of price policy change and how long it appears likely to last. However, the magnitudes involved suggest that a slowing-down in the rate of growth of competitor production and a step-up in demand, would have a significant positive impact on future U.S. trade prospects.

World Rice Outlook

Three consecutive bumper world rice harvests have resulted in record supplies of rice on the world market. Many traditionally important rice importing countries have neared self-sufficiency in rice production, sharply reducing rice import demand, while other former importers have even become net exporters, adding further to the relative oversupply. Other importing countries have been forced to limit rice imports due to continuing economic

difficulties. As a result, world rice trade is estimated to fall to only 11.4 million tons in CY 1985 and CY 1986, the lowest level since 1978.

The combination of larger supplies and reduced demand have forced world rice prices to their lowest levels, in real terms, since the mid-60's. However, the U.S. farm loan for rice has prevented U.S. prices from matching world prices, and as a result, U.S. rice has become increasingly less competitive on the world market. U.S. rice exports are expected to continue the steady decline from the peak of 3.03 million tons in the 1980/81 August/July marketing year to only 1.85 million tons in 1985/86.

By region, the major U.S. markets continue to be Western Europe, the Middle East and the Caribbean. By country, Iraq, Saudi Arabia, the Republic of South Africa, Canada and the EC-10 have been the steadiest U.S. customers. While U.S. exports to Iraq (under GSM-102) and the Caribbean continue to show good growth, exports to all other areas have been eroding at various rates. Good quality Thai rice, priced as much as $170 per ton below U.S. rice, continues to displace U.S. rice in the important markets of Western Europe, South Africa and Saudi Arabia. However, perhaps the most significant loss has been the Republic of Korea which imported over 1.0 million tons of U.S. rice as recently as 1980/81 but has now become self-sufficient in rice production.

WORLD RICE SITUATION 1/

	Calendar 1983	Calendar 1985	Calendar 1986
		Million Tons	
PRODUCTION			
India	70.7	89.3	90.0
China	161.2	178.3	172.0
Thailand	16.9	18.3	18.8
Indonesia	33.6	38.0	38.5
Pakistan	5.2	5.2	5.1
United States	7.0	6.2	6.0
Total	452.3	468.9	465.1
UTILIZATION	289.6	315.7	314.3
STOCKS			
United States	2.3	2.0	2.6
Foreign	15.0	18.9	20.4
EXPORTS			
Thailand	3.7	4.1	4.3
Burma	.8	.4	.5
Pakistan	1.3	.9	.9
United States	2.3	1.9	1.8
Other	3.8	4.1	3.9
IMPORTS			
Korea	.2	--	--
Nigeria	.7	.5	.5
Indonesia	1.2	--	--
Other	--	10.9	10.9
TOTAL WORLD TRADE	11.9	11.4	11.4

1/ Production rough basis; other items milled basis

1985/86 DOMESTIC WHEAT SITUATION

Nearly 65 million acres of wheat was harvested in the summer and fall of 1985 resulting in a crop of 2.4 billion bushels, down about 175 million from the 1984 crop and almost identical to the 1983 crop. Although the harvested yield of 37.4 busnels per acre was the third highest, it was about 2 bushels per acre below the previous two years. Yield declines from the previous year occurred in nearly one-half of the States, with significant declines in many of the Southeastern soft red winter wheat States, Pacific Northwest States and in Montana -- drought has impacted yields in that State since the 1983 crop. All time high yields were achieved in the States of Colorado, Illinois, Indiana, Michigan, Minnesota, New Mexico, North Dakota, and Ohio.

Program provisions for 1985 featured a 20 percent Acreage Reduction Program (ARP) coupled with a 10 percent paid land diversion program. Other major provisions included a $4.38 per bushel target price, $3.30 per bushel loan rate and advance deficiency and diversion payments (one-half of the estimated deficiency payment of $1.08 per bushel and the $2.70 per bushel diversion payment). During the sign-up period, October 15, 1984 through April 1, 1985, nearly 46 percent of the farms with wheat acreage bases accounting for about 74 percent of the total acreage base enrolled in the 1985 program. Although final compliance data has not been tabulated, it is expected to show participation at essentially the enrollment level. 1985 program contracts were binding following the enrollment period and liquidated damages were assessed for noncompliance. Binding contracts were also in effect for the 1984 crop, where final compliance acreage was equal to 99 percent of the enrolled acreage. Participation by regions compared with 1984 levels is shown in the following table:

Region	1984			1985		
	Total Base	Complying Base	Percent Complying	Total Base	Complying Base	Percent Complying
	--	1000 Acres	--	--	1000 Acres	--
Pacific Northwest 1/	6398.0	4128.0	64.5	6413.6	5003.9	78.0
West 2/	2676.2	1330.5	49.7	2651.2	1567.6	59.1
Northern Plains 3/	28338.3	21249.3	75.0	28776.5	25266.5	87.8
Central Plains 4/	21855.0	13290.8	60.8	21997.7	15516.9	70.5
Southern Plains 5/	15924.2	10760.9	67.6	15803.3	11585.4	73.3
Lake States 6/	982.8	272.6	27.7	1013.9	543.6	53.6
Corn Belt 7/	7749.9	2388.8	30.8	7693.3	4588.4	59.6
Northeast 8/	566.0	125.2	22.1	564.8	233.0	41.3
Delta 9/	5464.2	1470.9	26.9	5244.6	2985.8	56.9
Southeast 10/	4014.5	1536.8	38.0	3726.1	2151.7	57.8
U.S.	93969.1	56553.8	60.2	93884.9	69442.6	74.0

1/ ID, OR. WA. 2/ AZ, CA, NV, NM, UT. 3/ MN, MT, ND, SD. 4/ CO, IA, KS, NE, WY. 5/ OK, TX. 6/ MI, WI. 7/ IL, IN, MO, OH. 8/ CT, DE, ME, MD, MA, NJ, NY, PA, RI, VT. 9/ AR, KY, LA, MS, TN. 10/ AL, FL, GA, NC, SC, VA, WV.

Although U.S. total supplies (3,852 million bushels) for the 1985/86 season are the lowest since 1981/82, ending stocks on May 31, 1986 are projected at a record 1,742 million bushels. These record stocks were brought on by a slight decline in domestic use and a sharp drop in exports (30 percent) from the previous year. U.S. wheat exports have declined 43.5 percent since the record

1981/82 season (1,771 million bushels) with over two-thirds of that drop occurring this year. Some could fall below USDA's 1.0 billion bushel estimate. The high value of the U.S. dollar relative to other foreign currencies, our high price support levels, depressed third world economics, larger crops in the USSR and China--our top importers--and increased competition from our competitors has led to the substantial decline in U.S. exports. In an attempt to shore up U.S. exports and counter unfair trade practices being followed by some of our competitors, the Export Enhancement Program (EEP) was implemented beginning with the 1985/86 marketing year. Use of the program began slowly but has picked up in recent months. The program to date has been directed toward Middle East countries and targeted against the high subsidies of the E.C. It is estimated that 35-75 million bushels of CCC owned grain will be awarded in bonuses under the EEP during the 1985/86 marketing year.

Domestic food use (estimated at 660 million bushels) continues to move upward at an annual rate of about 2 percent, with wheat used for seed averaging about 100 million bushels per year. The major factor affecting changes in domestic use is wheat utilized for feed. Wheat feeding during the past two years as well as this marketing year has been brisk (379 million bushels average) running nearly three times greater than in the 1970's and early 1980's. With wheat prices falling during the past three years and the spread relative to feed grain prices narrowing to feed value relationships, wheat feeding has expanded significantly. During the June-September period wheat prices were generally low relative to feed grain prices making wheat a very good feed substitute. The indicated near record volume of wheat feeding at about 325 million bushels during this period reflects this positive wheat/feed grain price relationship. However, with record 1985 feed grain crops being harvested and with much lower feed grain prices, wheat's price advantage has eroded considerably and feeding for the balance of the year is expected to be minimal. The 1985/86 feeding level is projected at 350 million bushels, 15 percent below the previous year.

Program	Million Bushels
(Quantities As of 10/31/85)	
Farmer-Owned Reserve (FOR)	620.4
Special Producer Storage Loan Program	37.8
CCC-Owned Inventory	493.9
9-Month Regular Loans:	
1983 Crop	1.1
1984 Crop	46.9
1985 Crop	672.1
Total	1872.2
Additions:	
1985 Loan Disbursements 1/	96.0-171.0
Loan Redemptions:	
FOR Repayments	10.0-50.0
9-Month Loan Repayments	40.0-140.0
CCC Dispositions:	
EEP/PIK	35.0-75.0
P.L. 480 and Other	20.0-30.0
Total As of June 1, 1986	1673.2-1938.2

1/ Estimated loan volume from 1985 crop = 775-850 million bushels.

Wheat stocks at the end of the 1985/86 season are projected at a record 1,742 million bushels--over 300 million bushels above a year earlier. The key element of this stocks situation is its composition. Nearly the entire volume is expected to be under some type of government program at season's end. The preceding table illustrates this situation:

The above data points to a very tight free stocks situation for the balance of the 1985/86 season. This situation suggests either USDA demand estimates may be too high or that market prices will rise to above loan redemption values freeing up some of the government program stocks. A combination of both of these factors is the most likely outcome.

The breakdown of estimated ending stocks by class of wheat and the current composition of those stocks are shown on the following table:

Item	Stocks By Class - May 31, 1986					
	HRW	SRW	HRS	White	Durum	Total
	- - - - Million bushels - - - - - - -					
1985/86 Ending Stocks	896	50	488	197	111	1742
Current Stocks Situation (As of 10/31/85):						
FOR/SPSLP	282	7	184	118	67	658
Regular Loans	419	29	161	84	27	720
CCC Inventory	295	49	87	46	17	494
Difference	-100	-35	+56	-51	0	-130

The above table further illustrates the tight stocks situation that will be a key factor in determining the balance of the 1985/86 demand and price situation for wheat.

Wheat prices for the 1985/86 season are estimated to average between $3.00-$3.20 per bushel, the lowest level since the 1978/79 season. Prices during the first five months of the marketing year (June-October) have averaged $2.98 per bushel, $.32 a bushel under the 1985 loan level. This market/loan price differential is unprecedented. However, since September, market prices have risen over 30 cents per bushel reflecting some seasonal adjustment, the free stocks situation and the EEP announcements. The price situation for the last seven months of the marketing year will be heavily influenced by the free stocks situation in addition to the loan level for the 1986 crop which may be significantly below the 1985 level of $3.30 per bushel.

It is obvious from the simple average of the first five month wheat prices that the 1985-crop wheat deficiency payment rate will be at the maximum level of $1.08 per bushel. Final deficiency payments will be issued to participating farmers after December 1, 1985. The total amount of deficiency payments are estimated at about $1.5 billion, nearly 50 percent greater than for the 1984 crop. Since farmers could receive advances on their deficiency payments (one-half of estimated payment), the total amount of payments to be paid out in December will be about $900 million.

1986-CROP OUTLOOK AND 1985 FARM BILL

Producers planted winter wheat this fall without the knowledge of the 1986 farm program. Generally, the fall seeding was under ideal moisture conditions. Excess moisture in some areas is delaying plantings. Fall grazing of wheat in the Southwest will likely be the best in several years. These conditions point to the potential for high yields for the 1986 crop. Winter wheat seedings are estimated to be above last year. The following increases seem reasonable based on random surveys:

Hard Red Winter - up 4-8 percent
Soft Red Winter - up 10-25 percent
White - unchanged to up slightly

Apparently, in much of the HRW areas only part of the seeded area is being fertilized in anticipation of some type of acreage reduction program for the 1986 crop.

Abundant moisture conditions prevail in the spring wheat areas. However, plantings will depend heavily on the 1986 program provisions.

Therefore, the early outlook for the 1986 crop would suggest the potential for record yields with the production level limited by the ultimate 1986 program provisions. Based on pending legislation, it seems reasonable that at least a 20-30 percent acreage reduction will be applicable.

The future situation for wheat (1986 and beyond) will be greatly influenced by the outcome of the 1985 Farm Bill deliberations. Achieving a consensus on the direction of the 1985 Farm Bill has been very difficult given the depressed farm economy, budget constraints and the desire by the Administration and the Congress to cut the Federal deficit. The opinions on how to resolve the agricultural situation have varied greatly. The range of solutions offered have been from significantly lowering all program price supports and phasing out acreage reduction programs to mandatory acreage controls, marketing quotas and significantly higher price supports. The debate has gone on for nearly 15 months. The House has passed its version of the 1985 Farm Bill (H.R. 2100). However, the full Senate has not completed action. Since differences exist between the two bills, a conference to work out these differences will be required. The conclusion of this process will likely be lengthy, but may be accomplished by the end of December. The Agriculture and Food Act of 1981 was not signed into law until December 22, 1981. A farm bill after the first of the year does not seem unreasonable.

Key provisions of the 1985 farm bill will likely include (1) target prices at 1985 levels and possible declining in subsequent years; (2) declining loan levels with authority to lower them to as low as $2.40 per bushel by the 1986 crop; (3) continued ARP, set aside and land diversion authority; (4) acreage bases set using 5-year slanting history; (5) a long-term conservative program idling up to 30 million acres as highly evedible land and (6) an extensive export title by expansion of our marketing posture.

Does a Potential for Continued Excessive Production Capacity Exist for Wheat

Wheat acreage idled during the 1982 thru 1985 crop years will total about 75 million acres. This four-year total is nearly 40 percent of all wheat acreage

idled since wheat stabilization programs began with the 1962 crop. During the 1960's and 1970's average production was slightly below average use. Therefore, during this 20-year period production adjustment efforts were generally successful in controlling the buildup of stocks.

But, the average carryover for the 1960's was a burdensome 980 million bushels--an excessive level when compared to an average annual use of 1.4 billion bushels. However, for the 1970's, the average carryover was 796 million bushels, a reasonable level considering that average use during this decade increased to 1.8 billion bushels annually. (Appendix Table I) During both decades average yields increased about 5 bushels per acre. (Appendix Table II)

Even though the 1980's have seen record use at an annual average of 2.5 billion bushels, the acreage harvested has averaged more than a fifth above the 1970's and average yields have jumped by nearly 5 bushels even with the acreage expansion. (Appendix Table II) This has resulted in average carryover stocks above 1.3 billion bushels, 200 to 300 million bushels above what is generally considered a reasonable level. (Appendix Table I) This has come about despite the massive acreage reduction efforts of the 1980's.

The sharp rise in wheat yields during the past 5 years seem to be marking a new era of yield advances. This is supported by the introduction of hybrid and improved seed varieties. Also, research and actual application of production technologies such as intensive management practices--seed spacing; fertilization; weed, disease and lodging control--are bringing about excellent yield advances. These intensive practices have been used extensively in Europe in recent years. High yields in the EC for 1984 are further evidence of the impact of such intensive management practices. The use of hybrid and improved seed varieties, as well as intensive management practices, in the U.S. is expected to expand significantly in the future. Therefore, it seems quite likely that we may see U.S. national wheat yields averaging 45 bushels per acre by 1990 and possibly approaching 55 bushels per acre by the year 2000.

Given this outcome the critical question becomes, "Can demand be increased sufficiently to offset the increased production potential?" Or, even with maximum increases in demand, will an excessive production capacity still exist? The latter appears to be the case. Total use for the 1984/85 marketing year was a record 2.6 billion bushels. With the 1984-crop yield of 38.8 bushels per acre and the harvested area at 67 million acres, production was slightly above use. This situation occurred even though 18.5 million acres of wheat base were idled.

Wheat can be easily grown in all areas of the U.S. Because the out-of-pocket costs of producing wheat are relatively low compared with other crops, many farmers outside of the traditional wheat areas, especially in the soft red winter wheat areas of the Southeast, have found that integrating wheat into their double cropping patterns is very suitable and it also provides an early cash flow. This situation is not likely to be reversed. Certainly economic factors may slow or even reduce the amount of wheat acreage planted in these areas. But, the bottom line is that the expanded area will largely remain in wheat production.

The U.S. average production (harvested) acreage base for wheat, given no acreage controls, is probably about 80 million acres. With current yields this equates to an annual production potential of over 3 billion bushels; with increased yields, a buildup to over 4 billion bushels produced annually is likely by the end of the century.

Can domestic use and exports of wheat keep pace with this productive capacity? Certainly, if future farm and fiscal policy creates an atmosphere where U.S. wheat is fully competitive in world markets, export demand will increase significantly. However, an expansion in domestic use of wheat above the current 1.1 billion bushel level does not seem very probable unless a sharp expansion occurs in industrial use--such as conversion to alcohol.

Given an ideal competitive position and an improving world economy, U.S. exports during the next ten years might climb to 2.5 billion bushels. However, to accomplish this, world wheat trade increases would have to duplicate the percentage increase in average world trade of the 1970's and 1980's over the decade of the 1960's. (Appendix Table II) This also assumes that the U.S. share of world trade would recover to about 45 percent. Attaining and maintaining long term U.S. exports at a 2 billion bushel annual level by 1990 may be more realistic. If this export level were attained, combined with a domestic use of 1.1 billion bushels and a national wheat yield of 45 bushels per acre, the harvested area needed to produce this usage would be about 69 million acres. This leaves an excess of 11 million acres below the estimated production base. Only if exports expanded to 2.5 billion bushels or domestic use increased sufficiently to result in a total wheat demand of 3.6 billion bushels--nearly 40 percent above the record 1984/85 demand level--could the full production base be utilized. And, that would not provide for any reduction in stocks or offset further advances in yields during the intervening period.

APPENDIX TABLE I WHEAT: HISTORICAL PRODUCTION, USE AND STOCKS- 5-YEAR AVERAGES

5-Year Period	Production	Domestic Use	Exports	Total Use	Ending Stocks	Stocks To Use Ratio
	- - - - - - - Million Bushels - - - - - - -					Percent
1950-54	1094	658	328	986	719	72.9
1955-59	1095	602	447	1049	1170	111.5
1960-64	1222	602	718	1320	1222	92.6
1965-69	1425	708	707	1415	738	52.2
1970-74	1602	769	944	1713	636	37.1
1975-79	2046	792	1163	1955	956	48.9
1980-84	2589	961	1529	2490	1297	52.1
1985-	2419	1110	1000	2110	1742	82.6

APPENDIX TABLE II WHEAT: HISTORICAL WHEAT YIELDS, PRODUCTION AND HARVESTED ACREAGE - 5 YEAR AVERAGES

5-Year Period	Harvested Acreage (Mil. Ac.)	Diverted, Set-aside, etc. (Mil. Ac.)	Yield (Bu./Ac.)	Change In Yield From Previous 5-Yr. Period (Bu./Ac.)
1915-19	59.1	--	13.9	-0.4
1920-24	59.6	--	13.8	-0.1
1925-29	58.2	--	14.1	+0.3
1930-34	54.2	--	13.5	-0.6
1935-39	57.3	--	13.2	-0.3
1940-44	54.0	--	17.1	+3.9
1945-49	71.0	--	16.9	-0.2
1950-54	63.4	--	17.3	+0.4
1955-59	49.1	--	22.3	+5.0
1960-64	48.5	4.6	25.2	+2.9
1965-69	51.9	5.3	27.5	+2.3
1970-74	51.6	11.3	31.0	+3.5
1975-79	65.2	3.6	31.3	+0.3
1980-84	71.6	10.8	36.3	+5.0
1985-	64.6	19.3 Est.	37.4	+1.1

APPENDIX TABLE III WHEAT: HISTORICAL WORLD TRADE/UTILIZATION AND U.S. SHARE, 5-YEAR AVERAGES

5-Year Period	World Trade 1/		World Utilization	
	Actual (mmt)	U.S. Share (%)	Actual (mmt)	U.S. Share (%)
1960-64	48.2	40.46	244.2	6.71
1965-69	52.6	36.58	296.8	6.49
1970-74	60.3	42.62	355.0	5.89
1975-79	72.2	43.85	403.2	5.34
1980-84	100.9	41.24	468.2	5.59
1985-	90.5	30.07	494.0	6.12

U.S. AND WORLD OUTLOOK FOR FEED GRAINS

OUTLOOK '86

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The feed grain outlook for 1985/86 is one of record U.S. output, diminished Soviet demand, and large competing supplies in world trade. Prices of feed grains are currently depressed with an expected 1985/86 U.S. carryout exceeding the 1982/83 pre-PIK record level. However, new farm legislation could have a major impact on prices, supplies, and demand in 1986.

Global Supply Situation and Outlook

Global coarse grain production is expected to reach 844 million tons in 1985/86, 4 percent over last year's record. Output is well above the reduced 1983/84 level, which was caused entirely by decreased U.S. output from the PIK program and the severe drought. Foreign output has expanded for the last 4 years.

World output changes closely parallel the U.S. crop size, especially for corn. The United States accounts for almost one-third of world coarse grain production and almost one-half of global corn output. On a global basis, corn is forecast to account for 56 percent of total coarse grain output, with 21 percent in barley, 9 percent in sorghum, and the remainder in rye, oats, millet and mixed grains. In the United States, output is more concentrated in corn, which accounts for four-fifths of coarse grain production.

Production in the major competing exporters continues to grow for the third consecutive year, but there are major differences in crop conditions among countries. Record feed grain crops in the United States have not been matched in competitors except for Thai corn. For two Southern Hemisphere producers, early forecasts imply reduced output for crops to be harvested in 1986. Total coarse grain output in Argentina may fall slightly as relatively low expected sorghum area and output may offset an expected increase in the corn harvest--possibly equalling the previous record. Australian coarse grain production is forecast down sharply despite increased area.

Sizable output gains are forecast for the other 3 major competitors in 1985/86. Canadian coarse grain production will likely be up over the poor crops of the 2 previous years. Barley output in the three Prairie Provinces has been hurt by extremely wet harvest weather and quality problems are likely. In contrast, corn area, yield and output in the eastern provinces will likely set records. Thailand has a record corn crop this year, with area and yields both way up. South Africa will likely see a normal-size coarse grain crop.

COARSE GRAIN PRODUCTION BY MAJOR COUNTRIES

	1984/85	1985/86 Proj.	Change
		Million Tons	Percent
Major Exporters			
Argentina	19.1	18.9	-1
Australia	8.5	7.8	-8
Canada	21.9	23.5	+7
Thailand	4.7	5.6	+18
South Africa	8.5	8.9	+5
Major Importers			
EC-10	75.0	72.0	-4
Eastern Europe	73.6	66.4	-10
Other Western Europe	28.7	28.7	0
Mexico	14.5	14.6	+1
USSR	86.0	94.0	+9

Coarse grain production of the major importers as a group is forecast down slightly in 1985/86. Adverse weather conditions reduced both the quantity and quality of Western and Eastern European grain this year. Production of coarse grains in Eastern Europe may be below that of the previous 3 years. Output in the European Community is second to last year's record.

Soviet total grain output is forecast at 190 million tons, a substantial rebound from last year's depressed estimated level. Yields and output of coarse grains are high relative to the past decade. Barley accounts for more than half of Soviet coarse grain production, with oats, rye and corn accounting for roughly equal shares of the remainder. Corn and winter barley are the highest yielding of the coarse grains, but their cultivated area is extremely limited.

U.S. Supply

The domestic supply of feed grains is abundant. Heavy plantings and favorable growing conditions have been observed since the early summer, and large crops have been anticipated. Record crops of corn, sorghum and barley are combining to push total feed grain supplies over 321 million tons, of which 271 million is 1985 crop production. The 8.7 billion bushel corn crop, added to carryin of 1.4 billion, gives total corn supply of 10.1 billion bushels for 1985/86.

The large crops and growing supplies are not out of line with recent trends, however. Except for 1980 and 1983, with drought- and PIK-reduced crops, the U.S. has been in a position of accumulating stocks of feed grains since 1974.

Grain production is determined by area and yield. The area planted to feed grains has flucuated fairly widely in the past decade, sometimes reduced

by Government program incentives. In 1983, the PIK program reduced the area planted to feed grains to 102.8 million acres. Last year, area rebounded to 121.9 million. The 1985 planted feed grain area of 127.4 million acres, and 83.2 million acres of corn, was just below the highs of the late seventies.

Unlike area, yields have greatly increased. The 1985 feed grain yield of over 2.4 metric tons per acre harvested is almost one-third higher than the average yield of the seventies. Both corn and sorghum, accounting for over 90 percent total feed grain production, had record yields on large plantings in 1985. While cropland trends may fluctuate, yield improvements tend to be irreversible, with only temporary disaster-related declines, such as the 1983 drought which reduced corn yield to 81 bushels per acre harvested. Although we may not soon surpass yields from 1985's excellent growing season, we can generally expect yields to continue to increase.

This supply abundance is contributing substantially to fall tightness in available storage. The corn supply alone may tie up about half of the estimated 20 billion bushels of grain storage capacity available nationwide. The tightness in storage availability causes several problems for grain producers: grain is forced to move from tight to surplus storage areas; temporary storage measures are used that lead to increased risk of quality loss; commercial storage rates are bid higher. Further, farmers with intentions of placing crops under 9-month CCC loans are facing a shortage of approved facilities and a lower net benefit because of higher storage cost. An even worse problem may be anticipated for the fall of 1986.

The production outlook for 1986 is difficult to sort out without knowledge of programs and without even a farm bill in place. However, certain guesses may be made, based on proposals currently being debated. For feed grains, target prices are expected to remain at or near current levels, while acreage reduction of about 20 percent may be expected. This would lead to fairly high participation with moderate acreage reduction.

Therefore, in the absence of a really aggressive acreage reduction, we may still expect 70 to 80 million acres of corn and 120 to 130 million acres of feed grain area planted in 1986. Barring serious weather problems, supplies should stay abundant and stocks continue to accumulate.

Global Demand Situation and Outlook

Global use of coarse grains will almost reach 800 million tons in 1985/86 as it continues to increase. World use is almost double the 1960 level and has grown 150 million tons in the last 10 years. Even the sharp drop in U.S. domestic use in 1983/84 did not cause global use to drop. Almost two-thirds of global coarse grain use is for feed. The United States accounts for about one-quarter of world feed use and the USSR, the European Community and Eastern Europe account for half of the remainder. The U.S. dwarfs other countries in magnitude of coarse grain feed use, exceeding the second largest user, the USSR, by 50-70 percent in recent years. However, wheat feeding is larger in the USSR, the EC, and in Eastern Europe than in the United States. Though

foreign feed use has grown steadily in recent years, those gains have come at least partly from other countries with expanding livestock output. Total foreign feed use of coarse grains is expected to grow by a little under 2 percent this year.

The large Soviet grain harvest combined with a record forage output will dampen increases in Soviet feed use of grains in 1985/86. However, the decline is likely to be in wheat feed use as coarse grain feeding is forecast at just below last year's record 80 million tons. Based on recently released data on concentrates fed, it appears that there has been a minor improvement in hog and poultry feeding efficiency on state and collective farms in 1983. In addition, there has apparently been some success in shifting more feeding to non-concentrate feeds, especially hay and silage. Animal inventories as of October 1st show reduced cattle and hog numbers but continued increases in poultry.

USSR: COARSE GRAINS AND ANIMAL NUMBERS

	1983/84	1984/85	1985/86
		Million Tons	
Production	99	86	94
Feed Use	77	80	79
Imports	11.5	27	17
Animal Numers		October 1 Inventories	
		Million Head	
Cattle	93.7	95.7	95.4
Hogs	61.5	62.3	60.3
Poultry	743.4	755.0	777.1

In Eastern Europe feed use in recent years is closely correlated with crop size and has fallen from the late 1970's and early 1980's when imports were high--equal to as much as 20 percent of annual feed use. In recent years, financial constraints have caused reduced imports. Feed use, which had risen steadily in the decade of the 1970's, has fluctuated annually since 1980/81. Corn imports and hence feed use have been cut the most sharply. About 15 percent of foreign feed use of coarse grains is in Eastern Europe.

Coarse grain feed use in the European Community is expected to rise above the 50 million ton level of the last two years because of abundant domestic supplies. Feed use of coarse grains in the member nations of the EC-10 has actually declined from over 60 million tons in the late 1970's as wheat feeding has risen steadily. Corn feed use has fallen over one-quarter from its peak level in 1976/77, and its share of total grains fed in the EC-10 has fallen from 34 percent to a forecast 24 percent this year.

Developing countries have achieved steady gains in feed use for over a decade. Total feed use of coarse grains in these countries has more than doubled since 1975/76. However, feed use in all developing countries combined is less than for either the USSR or the United States. In developing countries, however, corn accounts for over half of coarse grains fed, in contrast to the European Community and the USSR, where barley is much more important.

U.S. Feed and Food, Seed, and Industrial Use

The major market for U.S. feed grains is for domestic livestock and poultry feeding, with domestic feed and residual use accounting for about 60 percent of total disappearance including exports and 80 percent of total domestic use. Feed demand for grains is affected by grain prices, livestock prices and production, and the prices of competing and complementary feeds.

Feeding may vary because of animal numbers or because of feeding rates. Feed and residual use of the four grains in 1984/85 (October-September feeding year) was 130.4 million metric tons, up 11 percent from the previous year, despite only a 1-percent rise in grain consuming animal units (GCAU's). Thus, the disappearance per animal unit was up 10 percent from 1983/84 (which was depressed by high grain prices).

Evidence of heavier feeding rates for 1984/85 may be found in heavy slaughter weights of hogs and fed cattle. Fed cattle slaughter weights reached record levels and are continuing high relative to historical averages. Even considering favorable weather for livestock, the heavier slaughter weights obviously imply heavy feeding per animal, but also imply heavier feeding per pound of product because feed conversion efficiencies suffer.

For 1985/86, animal units are expected to decline 1 percent, with disappearance per animal projected to jump 5 percent and total tonnage of feed and residual use up 4 percent. The increased feeding rate is expected because of the large crop and lower grain and protein feed costs.

Feed grain use partly depends on competition from wheat, which may add as much as 13 million metric tons to annual domestic grain feeding when priced on parity with feed grains. Also, because of the balance sheet approach, the feed and residual disappearance includes waste, shrink and dockage which is expected to be larger in years of large, wet crops. Therefore, the variations in disappearance reflect crop quality as well as changes in feeding requirements.

Corn accounts for about 80 percent of feed and residual disappearance of the four feed grains, down from about 85 percent in 1980. In 1985/86, feed and residual disappearance of corn is projected to be around 4.3 billion bushels, a 5-percent increase over 1984/85. Over 13 million tons of sorghum were fed in 1984/85, more than any year since 1978/79, and feed use is projected to rise slightly this year.

Food, seed and industrial (FSI) use of the four grains continues to increase, with 1984/85 up 2.5 million tons from the previous year, and another

1.5-million-ton increase expected for 1985/86. FSI use of corn has been increasing steadily, largely due to growth in production of high fructose corn syrup (HFCS) and alcohol (largely ethanol for fuel). HFCS use has grown nearly 600 percent in the past 10 years and may be expected to level off as use in popular consumer products approaches a maximum, and competition from other sweeteners heats up.

Most alcohol from corn is used for fuel. Growth in ethanol production has been dramatic--from only about 10 million bushels of corn used in 1979/80, to over 200 million bushels in 1984/85. Recent developments, such as the EPA-mandated phase-down of lead content of gasoline and the possibility of competition from Braziiian ethanol have added uncertainty to the direction of demand for domestic corn use for ethanol production. For 1985/86, FSI use of corn is expected to increase another 55 million bushels to 1,120 million, mostly from further increases in HFCS and alcohol production.

U.S. Feed Use Per Animal Unit

	Feed and Residual Use of Total Feed Grains*	Grain Consuming Animal Units	Feed Grains Fed Per GCAU	Total Grains Fed Per GCAU
	Million Tons	Million Units	--- Tons Per Unit ---	
1981/82	128.3	76.7	1.67	1.71
1982/83	140.6	78.9	1.78	1.88
1983/84	117.1	78.2	1.50	1.67
1984/85	130.4	78.8	1.65	1.78
1985/86**	135.7	77.8	1.74	1.84

*About 80 percent is corn.
**Forecast.

Trade Situation and Outlook

World coarse grain trade is expected to decline in 1985/86 by more than 8 percent from last year to substantially below the 1980/81 peak level of 108 million tons. The major change will be an expected drop in Soviet imports, more than offsetting increases in other countries from last year. However, import demand in non-Soviet countries will likely still be low relative to recent years.

The United States traditionally absorbs changes in world imports due to its large role in corn trade, including increases from the USSR beginning in the early 1970's, from Eastern Europe in the mid-1970's, from China in the late 1970's, and from several developing countries during the decade. The availabilities of large supplies of corn and ease of movement in large ships make the United States the preferred supplier for large orders.

In the 1980's, however, various factors depressed U.S. sales and trade share--the appreciation of the dollar, financial constraints in several

markets, increasing U.S. support prices, the growth of EC barley exports, and the continued decline of EC corn imports. Despite record U.S. corn purchases by the USSR in 1984/85, the U.S. share of global coarse grain trade was the lowest in 10 years. The outlook for world demand for corn and other coarse grains for feed is bright in the longer term as demand for animal products grows in much of the world, but U.S. market share in the short run will be determined by prices or dramatic foreign production shortfalls.

U.S. exports could fall below 50 million tons in 1985/86 for the first time since 1974/75 and account for only 53 percent of world trade. Even in 1984/85, the U.S. export volume was a disappointing 56 million tons, only a marginal increase over 1983/84, when the drought and PIK depressed supplies and raised prices. With record sales of U.S. corn to the USSR in 1984/85, U.S. sales to other countries fell. U.S. sorghum exports have increased in the last 2 years and barley exports have seesawed while corn exports have declined for the last 5 years and are expected to drop sharply this year. Several factors are responsible for the sad state of U.S. corn exports, especially uncompetitive prices and large supplies in competitor countries.

As the price chart demonstrates, U.S. corn export prices have remained above Argentine prices. In fact, the gap has widened to $15 per ton in September of this year compared to an average of $6 in calendar year 1984 and $9 from January to August 1985. Increased supplies in the 5 major competing exporters--Argentina, Australia, Canada, South Africa, and Thailand--as a group in 1984/85, and likely again in 1985/86, caused loss of U.S. corn sales last year and will likely do so again this year.

In addition, sales of competing feed products and sales of coarse grains from non-traditional exporters have added to U.S. export problems. For instance, China likely exported over 5 million tons of coarse grains in the 1984/85 trade year, most of which was corn that largely displaced U.S. sales. The magnitude of this change is impressive as China has exported generally less than a half million tons in previous years. For the current trade year China's exports will likely drop off, but may remain above 3.5 million tons. Another major supplier which until 1983/84 was a net importer of coarse grains is the European Community. Last year EC exports exceeded imports by 4 million tons; thus exports to countries outside the EC were double imports. With high stock levels, import needs may fall again in 1985/86, although crop quality problems may require continued corn and barley imports. EC coarse grain exports, mostly barley, may fall in 1985/86 but equal the second highest level. In addition to coarse grain competition, U.S. exporters faced large Thai manioc sales to traditional U.S. corn markets and will face sales of EC and Canadian weather-damaged, feed-quality wheat this year. Another potential adverse factor for U.S. exporters is the expected rebound of South African corn output to a normal level for the crop currently being planted.

Coarse Grains Imports of Major Countries

	1984/85	1985/86 Forecast	Share of U.S. Exports In 1984/85
	Million Tons		Percent
USSR	27.1	17.0	28
Japan	20.8	21.5	24
Other Western Europe	6.8	5.1	7
Saudi Arabia	6.2	6.5	1
Mexico	4.2	4.6	6
Taiwan	4.0	4.2	6
EC-10	4.0	3.7	4
Korea	3.8	3.9	3
Eastern Europe	3.2	5.2	1
World	100.8	92.2	100

The major factor affecting world import demand this year is the USSR. With a forecast improved crop, record forage and reductions in some livestock numbers, import needs could fall by 10 million tons. Swings of this magnitude in annual import levels of Soviet coarse grains are not unusual. Last year the Soviets bought over 27 million tons of coarse grains from the world, 27 percent of total trade. They bought almost 16 million tons of U.S. corn, one-third of our corn exports and 28 percent of total U.S. coarse grain exports. For this year, a large part of the drop in Soviet coarse grain purchases will be absorbed by the United States.

In contrast to the wide variations in purchases by the Soviet Union, total coarse grain imports of Japan have increased relatively steadily in recent years, although they stagnated in 1984/85. U.S. sales to Japan fell by over 2.5 million tons last year because of competition from China's corn and Thai manioc. Even so, Japan took nearly one-quarter of U.S. coarse grain exports in 1984/85, making it our number two market. As well as losing sales to EC-10 and other Western European countries, we also saw a decline to Mexico. However, among major markets, purchases of U.S. corn by Taiwan rose in 1984/85. For this year, both U.S. and world sales to Japan and Mexico are expected to rise, but those to Western Europe and the USSR will likely fall.

Other factors besides price competitiveness and foreign supplies continue to affect the volume of U.S. exports. Moderate world economic growth should continue in 1986 and the pace of economic activity could improve slightly in developing countries. In addition, the dollar has weakened in 1985. Although the value of the dollar remains well above the level of the early 1980's, the declines in the dollar should mean lower prices to importers. Many analysts think the dollar may weaken further in 1986, particularly if the pace of economic growth abroad rises relative to U.S. growth. Both of these factors could increase demand for U.S. feed grains.

Feed Prices

Conditions have been bearish for U.S. feed grain prices: large plantings, favorable growing conditions, record yield and harvest, weaker export demand and rising inventories. The major question remaining is whether the Government loan program will support prices at the loan rate.

The farm price of corn fell steadily from April till October when it was $2.16. In October 1982, when conditions were similar, the farm price was $1.98, remaining well below the loan rate until the PIK program was announced. However, only 29 percent of the corn base was enrolled in the program that year. This year, with 71 percent of the acreage base in the program, 5 to 6 billion bushels may be eligible for CCC loans and eventual forfeiture to the Government.

Thus, the potential for free supply to tighten up this year is fairly substantial, even in the face of a record corn crop and near-record ending stocks. Recently, prices have strengthened. If loan placements are as heavy as expected, corn prices may show seasonal strength in the spring of 1986. Free stocks carryout outside of government held and loan program inventories is projected to be extremely tight, only 77 million bushels.

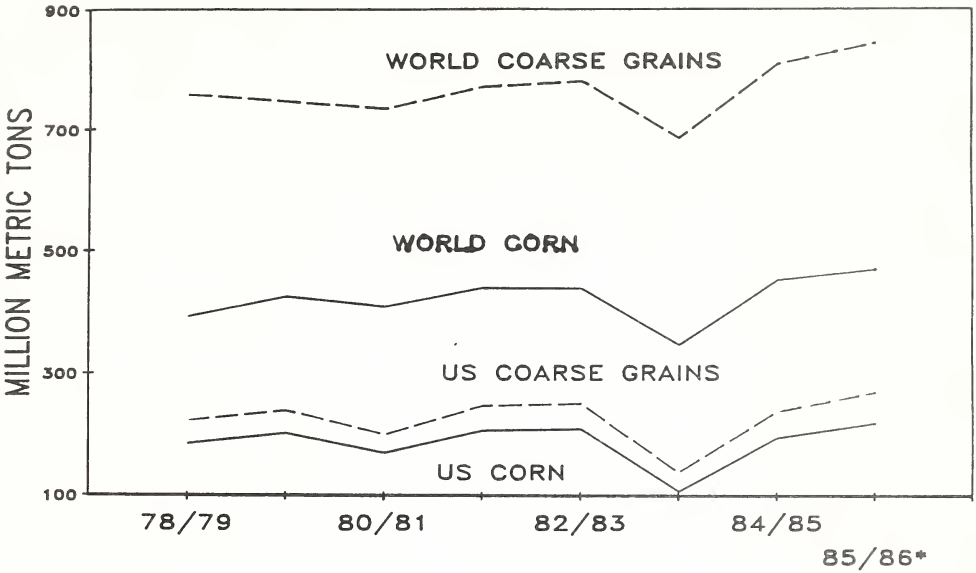
The effectiveness of the loan program may be mitigated, however, by storage tightness early in the season, and by 1986 crops of early feed grains and wheat, especially if loan rates for the new crops are greatly reduced. For now, the 1985/86 season-average corn price is expected to fall in the range of $2.35 to $2.55 per bushel, compared with $2.65 for 1984. The sorghum season-average price for 1985/86 is forecast between $2.15 and $2.35 per bushel, down from $2.40 last year. Since the new marketing year began, barley farm prices have been 10 to 20 percent below a year earlier and oat prices 20 to 40 percent lower. For 1985/86 the season-average price is forecast to range between $1.95 and $2.15 for barley compared with $2.30 last year and the season-average price for oats is forecast between $1.20 and $1.40 compared with $1.71 last year.

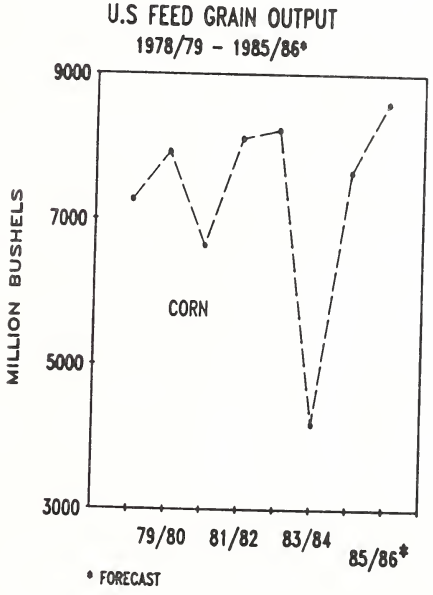
U.S. Farm Legislation

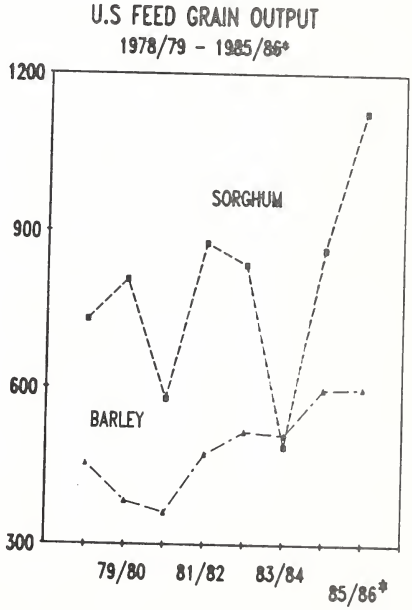
The Congress is still working on new agricultural legislation. Various provisions will have an impact on U.S. output beginning in the 1986 crop year and on prices starting immediately after passage. The most important provisions in terms of near-term supplies, demand, and prices are target prices, loan rates, acreage reduction program, and a proposed marketing loan, which collectively influence the market price levels for U.S. grains, especially in times of large supplies.

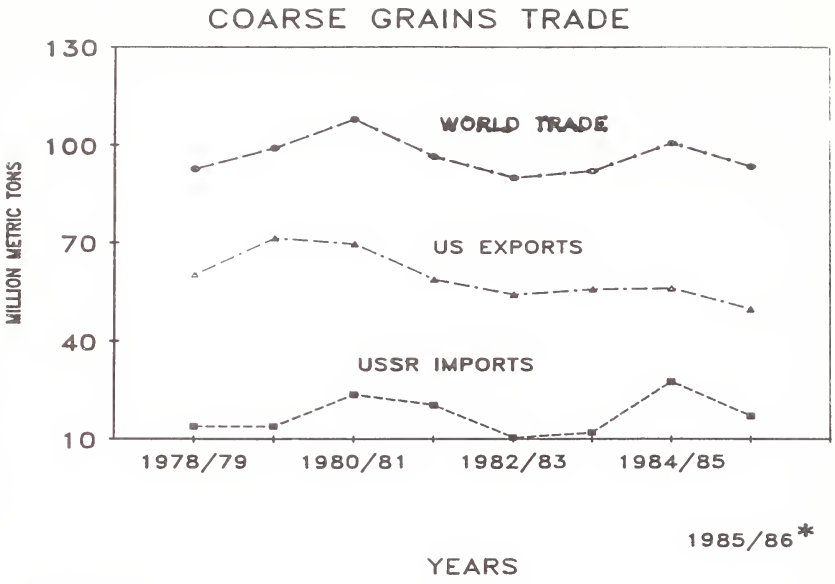
The outcome of the new agricultural legislation could have a major impact on the corn outlook for the 1986 and following crops. Global demand in future years for feed grains is linked to economic growth and financial liquidity as well as population growth. If U.S. feed grains can be provided at competitive prices, U.S. growers will benefit from expanding long-term global demand growth.

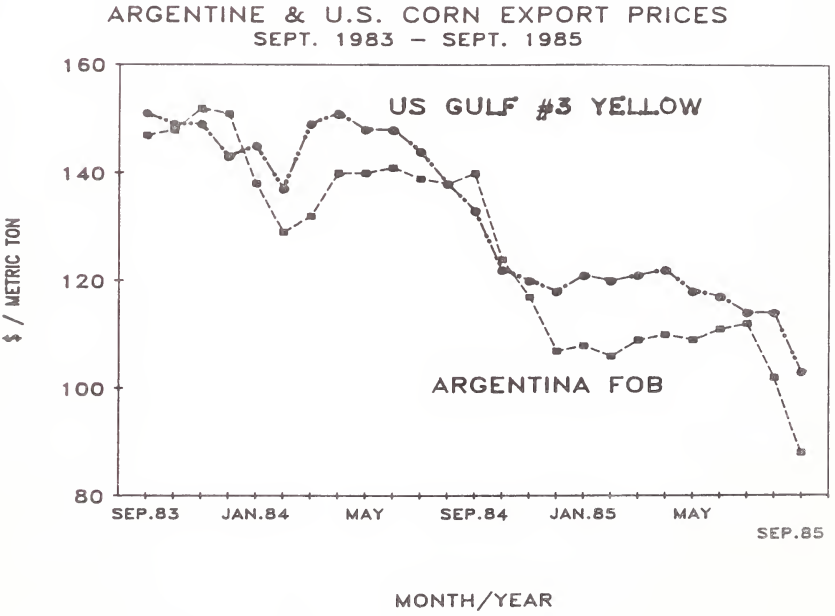
PRODUCTION: U.S. AND WORLD
CORN & COARSE GRAINS 1978 – 1986*





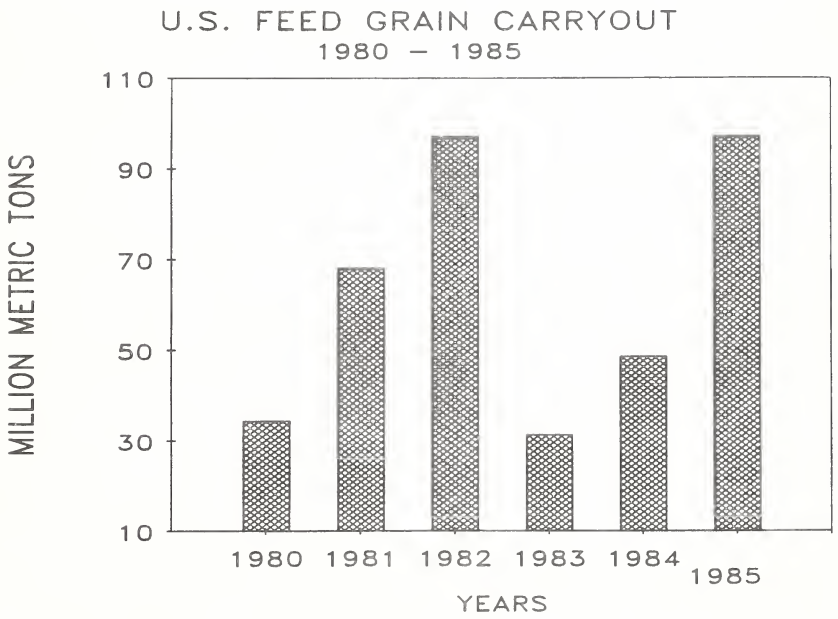



COARSE GRAINS TRADE
130
100
70
40
10
MILLION METRIC TONS
WORLD TRADE
US EXPORTS
USSR IMPORTS
1978/79
1980/81
1982/83
1984/85
1985/86*
YEARS
* FORECAST


ARGENTINE & U.S. CORN EXPORT PRICES
SEPT. 1983 – SEPT. 1985
160
140
120
100
80
$ / METRIC TON
US GULF #3 YELLOW
ARGENTINA FOB
SEP.83
JAN.84
MAY
SEP.84
JAN.85
MAY
SEP.85
MONTH/YEAR

U.S. Corn Supply and Demand Components

	1982/83	1983/84	1984/85	1985/86 Proj.
		Million Bushels		
Beginning Stocks	2,174	3,120	723	1,379
Production	8,235	4,175	7,656	8,717
Total Supply	10,410	7,297	8,383	10,097
Feed and residual	4,522	3,736	4,100	4,300
Food, seed and ind.	898	973	1,065	1,120
Exports	1,870	1,865	1,838	1,625
Total Use	7,290	6,574	7,003	7,045
Ending Stocks	3,120	723	1,379	3,052



ANOTHER GRAINS PERSPECTIVE

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Thank you for the invitation to participate in the 1986 Agricultural Outlook Conference. I have many fond memories of my years at USDA, and I welcome the opportunity to come back and be a part of the conference.

The U.S. grains outlook for 1985/86 can be summarized as follows: record production, a dismal export picture, increasing carryover stocks, and the lowest prices in several years. I would now like to look more closely at the outlook for wheat and feed grains in the current crop year, and also take an early look at supply-use prospects for 1986/87.

WHEAT

U.S. Supplies Decline

U.S. wheat supplies in 1985/86 are forecast at 3.85 billion bushels, 4 percent below a year earlier, and the lowest supplies since 1981/82. Although carryin stocks are up slightly from a year earlier, total supplies are declining because of the the smallest wheat crop since 1980. The 1985 U.S. wheat crop totaled 2,419 million bushels, 7 percent below the 1984 crop. Harvested acreage was down 3 percent from a year earlier, and the yield dropped to 37.4 bushels per acre, down 1.4 bushels from last year.

Exports to Drop One-Third From Year Earlier

A near-record foreign wheat harvest, sluggish import demand, and increased export competition are expected to result in a sharp reduction in U.S. wheat exports in 1985/86. We project exports for this crop year at 955 million bushels, about 50 million below the USDA forecast, and one-third below a year earlier. Based on export sales and shipments through mid-November, it is possible that U.S. exports could decline to 800-850 million bushels. Exports shipments are down nearly 50 percent from last year, and export commitments are the lowest in several years (see table on following page). In addition, a large Southern Hemisphere wheat harvest, and expected lower prices for 1986 crop-wheat will reduce import demand in the next several months. Although the export bonus program was first announced in June, only 37 million bushels have been sold under the program. Additional sales may total only 20-35 million bushels, well below the quantity offered. In the past few years, USDA has had a tendency to overstate export prospects. USDA's November export estimate has been above actual exports in 5 of the past 6 years (see table 1).

1985/86 U.S. Total Wheat Export Sales[1/] and Shipments as of Nov. 14, 1985
with Comparisons for Same Date Preceeding Years*

ITEM	1980/81 ACTUAL	1980/81 % OF ANNUAL EXPORTS	1981/82 ACTUAL	1981/82 % OF ANNUAL EXPORTS	1982/83 ACTUAL	1982/83 % OF ANNUAL EXPORTS	1983/84 ACTUAL	1983/84 % OF ANNUAL EXPORTS	1984/85 ACTUAL	1984/85 % OF ANNUAL EXPORTS	1985/86 ACTUAL	1985/86 % OF ANNUAL EXPORTS
	-Mil Bu-		-Mil Bu-		-Mil Bu-		-Mil Bu-		-Mil Bu-		-Mil Bu-	
TOTAL WHEAT												
Outstanding Sales	386	26.6	465	27.2	273	18.9	284	21.2	324	23.6	139	15.4
Accumulated Exports	661	45.6	808	47.2	642	44.6	567	42.3	799	58.3	419	46.3
Total Commitments	1047	72.2	1273	74.4	915	63.5	851	63.4	1123	81.9	558	61.7
June-May Exports	1450		1711		1441		1342		1371		905[2)]	
SOFT RED WINTER WHEAT												
Outstanding Sales	63	21.4	131	28.9	55	17.4	29	13.8	63	25.5	31	23.8
Accumulated Exports	208	70.7	241	53.2	188	59.5	98	46.7	185	74.9	78	60.0
Total Commitments	271	92.2	372	82.1	243	76.9	127	60.5	248	100.4	109	83.8
June-May Exports	294		453		316		210		247		130[2)]	
HARD RED WINTER WHEAT												
Outstanding Sales	210	32.1	232	32.5	119	18.8	154	23.8	188	27.5	49	11.0
Accumulated Exports	236	36.0	296	41.5	230	36.4	247	38.2	395	57.8	187	42.0
Total Commitments	446	68.1	528	73.9	349	55.2	401	62.1	583	85.4	236	53.0
June-May Exports	655		714		632		646		683		445[2)]	

* Based on Export Sales Report.
1/ Grain only.
2/ Connell estimates.

Export sales and shipments of all classes of wheat are down substantially from a year ago. Export commitments of hard red winter wheat are down 60 percent from a year ago, due primarily to smaller purchases by the USSR and Brazil. USSR purchases of 1985-crop U.S. wheat may total 2 million tons or less as the Soviets will likely purchase lower-priced 1986-crop wheat to meet a substantial portion of their commitment under the U.S.-USSR long term grain agreement. Export commitments of soft red winter wheat are 57 percent below a year earlier, and are the lowest since the late 1970's. Actual exports of soft red winter wheat will depend to a large extent on sales under the export bonus program.

Feed Use to Fall

Low wheat prices this past summer encouraged heavy wheat feeding, but record feed grain supplies and low feed grain prices will limit wheat feeding for the remainder of the crop year. Wheat feed and residual use in June-September totaled 330 million bushels, 10 percent below a year earlier, but the second highest level for that period since the 1940's. Feed and residual use during June-September exceeded exports for the first time in more than 35 years. For the remainder of the crop year, feed and residual use is projected at 20 million bushels, bringing total 1985/86 wheat feeding to 350 million bushels. Low corn and sorghum prices relative to wheat will result in sharply lower wheat feeding over the next several months. Domestic

use of wheat in 1985/86 is forecast at 1,110 million bushels, similar to USDA's forecast, but 4 percent below a year earlier.

U.S. Wheat Carryover Stocks to Increase Sharply

With sharply lower exports in 1985/86, total wheat use will fall well below production, boosting carryover stocks to a record 1.8 billion bushels (see table 2). The projected carryover is up one-fourth from 1984/85, and exceeds the previous record 1982/83 carryover by nearly 20 percent. The stocks-to-use ratio of 87 percent is up from 55 percent a year earlier, and would be the highest since 1962/63. If exports are below our current projection, total carryover stocks will about equal annual usage.

Carryover stocks of all classes of wheat are likely to be higher than the previous year, with the biggest increases expected in hard red winter and hard red spring (see table 3). Carryover stocks of hard red spring wheat are forecast at 154 percent of annual use. We project soft red winter wheat carryover stocks at 75 million bushels, up from 64 million a year earlier, and substantially above USDA's forecast of 50 million. With 83 million bushels of soft red wheat currently in government inventory or under loan, we do not expect prices to increase sufficiently to encourage large quantities of loans to be redeemed. However, some soft red wheat may be used for the export bonus program.

Tight Free Supplies of Wheat to Support Prices

Futures and farm prices of wheat have strengthened the past two months in response to heavy loan entries, tightening free supplies, harvest problems in the U.S. and Canada, and optimism about additional export sales because of the export bonus program. Kansas City and Chicago March futures prices are up 25-30 cents from late September. Prices in the next few months will be supported by the more than 1.8 billion bushels of wheat tied up in government programs (see table below). However, because of weakening export prospects, free supplies of wheat may be adequate to meet demand for the

CURRENT WHEAT STOCKS UNDER GOVERNMENT PROGRAMS

	HRW	SRW	HRS	DURUM	WHITE	MIXED	TOTAL
	10/31/85						
	Million Bushels						
CCC**	273.7	46.9	78.5	15.3	43.1	1.4	458.9
RESERVE[1)]	281.6	7.1	184.2	66.9	117.3	1.0	658.1
	555.3	54.0	262.7	82.2	160.4	2.4	1117.0
LOAN	418.9	28.8	160.6	27.2	83.9	0.8	720.2
TOTAL	974.2	82.8	423.3	109.4	244.3	3.2	1837.2

** INCLUDES 147 MIL BU (4 MMT) DESIGNATED FOR THE INTERNATIONAL FOOD RESERVE.

[1)] Includes loans in special producer storage loan program.

remainder of the crop year. As a result, I expect futures prices to trend sideways to lower over the next few months, with nearby futures prices averaging $3.10-3.25 a bushel at Chicago and Kansas City through the first quarter of 1986. Futures prices are expected to decline into the summer, primarily due to the likelihood of a substantially lower wheat loan rate for the 1986 crop. Because of the large stocks of wheat tied up in government programs, USDA may offer advance deficiency payments-in-kind next spring or a loan buy-down program in an attempt to increase free supplies of wheat. These programs would put downward pressure on prices.

1986/87 Outlook

U.S. winter wheat plantings are likely to increase 2-3 percent in 1986/87, boosted by a 5-7 percent increase in soft red winter wheat plantings, and a 1-3 percent rise in hard red winter wheat acreage. Soft red acreage is expected to be up substantially in the Corn Belt states, where acreage dropped dramatically last year because of a wet fall. In the Delta and southeast, a delayed soybean harvest will limit the increase in soft red plantings. Uncertainty about the 1986 acreage reduction requirements is likely to have caused hard red winter wheat producers to expand acreage from last year. Winter white wheat plantings are expected to be about unchanged from a year earlier. Total winter wheat plantings are forecast at about 59 million acres, up from 58.1 million in 1985/86.

Larger winter wheat acreage and a modest increase in spring wheat and durum acreage is expected to result in 77-79 million acres being planted to wheat in 1986/87 (see table 2). With normal abandonment and average yields, U.S. production is projected at 2,400-2,615 million bushels. Total supplies will likely be a record. Feed use will remain high because of heavy feeding next summer when wheat prices are likely to be competitive with feed grain prices. The lower wheat loan rate should enhance U.S. export prospects, but large world supplies will dampen the rise in exports. U.S. carryover stocks will continue to build, with the stocks-to-use ratio possibly exceeding 100 percent. Futures prices are likely to decline to the loan rate or below next summer.

CORN

Record U.S. Crop Boosts Supplies

Favorable growing conditions this past summer across the Corn Belt have resulted in a record U.S. corn yield of nearly 117 bushels per acre, 10 bushels above a year earlier, and nearly 4 bushels above the previous record set in 1982. USDA has raised the yield forecast every month, with the November estimate 6 bushels higher than USDA's initial estimate in August. The record yield and a 3 million acre increase in harvested acreage have boosted the 1985 U.S. corn crop to a record 8,717 million bushels, 14 percent above a year earlier, and 6 percent higher than the previous record 1982 crop. The final crop estimate, to be released in February, may be around 8.8 billion bushels, due in part to a likely increase in harvested area. Because yields were favorable, farmers had to use less acreage for silage, and thus

more acres were harvested for grain. Total 1985/86 corn supplies are forecast at a near-record 10.1 billion bushels, up one-fifth from a year earlier. Supplies of sorghum and barley are record large. U.S. feed grain supplies are projected at 321 million tons, one-fifth above 1984/85.

Corn Exports to Fall to 11-Year Low

U.S. corn exports in 1985/86 are expected to decline for the sixth consecutive year. I have forecast exports at 1,600 million bushels, slightly below USDA's export forecast, and 13 percent below a year earlier. With the slow pace of sales to date, it appears exports could decline 100 million bushels or more from my current estimate. Based on USDA's track record the past several years, it seems almost certain that their export forecast is too high. In each of the last 6 years, USDA's November corn export estimate has been above actual exports (see table 1). In 4 of the 6 years, the November estimate has been 8 percent or more above actual exports.

Total U.S. corn export commitments through mid-November of 600 million bushels were down nearly 30 percent from the same time last year, and were the lowest since the mid-1970's (see table below). Export commitments represented 38 percent of projected exports compared with a 5-year average of 44 percent. A larger 1985/86 Soviet grain harvest has reduced import requirements, and caused a sharp reduction in Soviet purchases of U.S. corn. Through late November, the USSR had purchased 153 million bushels of corn compared with purchases of 328 million at this time last year. I expect the Soviets to purchase about 275 million bushels of U.S. corn this crop year, down from 620 million in 1984/85. U.S. export commitments to countries other than the USSR are down significantly from a year ago. Export commitments, excluding the USSR, are down one-tenth from last year due to smaller purchases by Portugal, Japan, South Africa, Venezuela, and Iraq.

1985/86 U.S. Corn Export Sales as of November 14, 1985
with Comparisons for Same Date Preceeding Years*

ITEM	1980/81		1981/82		1982/83		1983/84		1984/85		1985/86	
	ACTUAL	% OF ANNUAL EXPORTS	ACTUAL	% OF ANNUAL EXPORTS	ACTUAL	% OF ANNUAL EXPORTS	ACTUAL	% OF ANNUAL EXPORTS	ACTUAL	% OF ANNUAL EXPORTS	ACTUAL	% OF ANNUAL EXPORTS
	-Mil.Bu-		-Mil.Bu-		-Mil.Bu-		-Mil.Bu-		-Mil.Bu-		-Mil.Bu-	
Outstanding Sales	1022	43.8	440	22.6	403	21.8	597	32.4	565	31.0	380	24.0
Accumulated Exports	318	13.6	260	13.4	230	12.4	259	14.0	282	15.5	220	13.9
Total Commitments	1340	57.5	700	36.0	633	34.2	856	46.4	847	46.5	600	37.9
Oct-Sep Exports[1]	2,331		1,946		1,850		1,844		1,823		1,585[2]	

* Based on Export Sales Report.
1) Grain only.
2) Connell estimate.

A record 1985/86 foreign coarse grain harvest, a larger Southern Hemisphere corn crop, and competition from Canadian feed wheat will continue

to dampen U.S. export prospects. In addition, the expectation of lower loan rates and prices for the 1986 corn crop will cause some importing countries to delay purchases until the fall. Corn export availabilities from Argentina and South Africa, the two largest Southern Hemisphere producers, are projected up more than 3 million tons in 1985/86. Also, Thailand harvested a record corn crop and may export 700 thousand tons more corn this year than in 1984/85.

Low Prices to Boost Feed Use

Corn feed and residual use in 1985/86 is projected at 4,300 million bushels, the same as USDA's forecast, but 5 percent above a year earlier. The larger feed use is due to higher feeding rates, improved livestock profitability, low corn prices, and increasing broiler production. Lower fed beef and hog production, larger supplies of other feed grains, and prospects for increased wheat feeding next summer will limit the increase in corn feeding. Broiler production this fall is forecast up 5 percent from a year earlier, with a 4-5 percent increase likely for the first half of 1986. The liquidation phase in the hog industry is likely to continue well into 1986. September-November farrowings are projected down 2 percent from last year, pointing to a 1-3 percent decline in hog production during the first six months of 1986. November 1 cattle-on-feed were down 8 percent from a year ago. Low cattle prices this past summer and poor profitability have caused a sharp cutback in the number of cattle on feed. Fed beef production in 1985/86 may be down 3-5 percent from 1984/85.

Total 1985/86 corn use is forecast at 7,020 million bushels, virtually unchanged from a year earlier. Higher feed use and increased use of corn in production of ethanol and high-fructose corn syrup will be offset by the lower exports.

U.S. Corn Carryover Stocks to More than Double

Corn carryover stocks in 1985/86 are expected to build to a near-record 3.1 billion bushels, up from 1.38 billion in 1984/85, and only 1 percent below the record 1982/83 carryover. The stocks-to-use ratio of a projected 44 percent compares with 20 percent in 1984/85, and would be the highest ratio since 1960/61. Virtually all of the projected corn carryover will be tied up in government programs. About 1.3 billion bushels will be tied up in the farmer-owned reserve, CCC inventory, and the storage loan program (see table 5). I expect 95 percent or more of the free stocks will be in the regular loan program, with most of these loans eventually forfeited to the government or placed in the reserve program.

Carryover stocks of sorghum, barley, and oats also will increase substantially in 1985/86 (see table on following page). Sorghum and barley stocks are projected up 85 percent and 34 percent, respectively, from a year earlier, mainly due to record harvests. Feed grain carryover stocks are projected at a record 102 million tons, nearly 5 percent above the previous record 1982/83 carryover.

U.S. FEED GRAIN CARRYOVER STOCKS

Grain	1981/82	1982/83	1983/84	1984/85	1985/86	% Change 85/86-84/85
	- - - - - - - - - - Million Bushels - - - - - - - - - -					
Corn	2174	3120	723	1379	3078	+123
Sorghum	296	400	251	271	502	+85
Barley	148	217	189	247	331	+34
Oats	152	220	181	180	233	+30
Total Feed Grains (MMT)	68.2	97.3	31.5	49.9	101.5	+103

Corn Prices to Trend Higher

Record corn loan entries are likely to strengthen cash and futures prices in the next several months. Increased feed use also will be supportive to prices. Cash prices have been below loan rates in most areas this fall, encouraging heavy use of the loan program. Through November 20, farmers had already placed 679 million bushels of corn under loan (see table 6). Weekly loan placements are expected to average 140-160 million bushels over the next 6-8 weeks. Total loan placements from the 1985 crop are projected at 2.85-3.35 billion bushels, 1 billion above the previous record placements from the 1981 crop. By the end of March, the total quantity of corn isolated from the market in government programs may exceed 4 billion bushels, or one-third above the projected carryover. The heavy loan placements will reduce free supplies of corn, and cause prices to trend higher through mid-1986. Nearby futures prices may average $2.40-2.55 a bushel during the first half of 1986. The higher futures prices will increase loan redemptions, particularly in the eastern Corn Belt.

The price outlook could change if USDA decides to use advance deficiency payments-in-kind or a loan buy-down program in the next few months. Both of these programs would increase free supplies of corn and pressure prices. Since 1985 loan programs for soybean and rice are likely to be changed in the new farm bill, it may be just a matter of time before loan programs for other commodities, such as corn and wheat, are modified to prevent massive loan forfeitures in the fall of 1986.

1986/87 Outlook

Corn planted acreage in 1986 is expected to decline 3-5 million acres from 1985 due to higher acreage reduction requirements for the 1986 corn program. Farmers will likely be required to remove 15-20 percent of their base acreage from production in 1986 in order to qualify for program benefits. The 1985 program only required a 10 percent reduction. In addition, because of expected lower corn prices, participation in the 1986 program may exceed 80 percent. With lower planted and harvested acreage, and average yields, 1986 corn production may decline substantially from the record 1985 crop (see table 5). However, because of larger carryin stocks, total corn supplies may approach 11 billion bushels, one-tenth above a year earlier.

Domestic use of corn is expected to increase because of the lower prices and increased broiler and hog production. Exports may expand because of the lower loan rate and weaker dollar. Total use, however, may again fall short of production, with carryover stocks likely reaching record levels. Futures prices are likely to trend lower in the second half of 1986 in response to the lower support price and burdensome supplies.

TABLE 1

USDA NOVEMBER EXPORT ESTIMATES COMPARED WITH ACTUAL EXPORTS

WHEAT

YEAR	NOVEMBER ESTIMATE	ACTUAL EXPORTS	ACTUAL EXPORTS AS % OF NOVEMBER ESTIMATE
	---- MILLION BUSHELS ----		
1979/80	1,400	1,375	98.2
1980/81	1,525	1,514	99.3
1981/82	1,900	1,771	93.2
1982/83	1,650	1,509	91.4
1983/84	1,400	1,429	102.1
1984/85	1,525	1,424	93.4

CORN

YEAR	NOVEMBER ESTIMATE	ACTUAL EXPORTS	ACTUAL EXPORTS AS % OF NOVEMBER ESTIMATE
	---- MILLION BUSHELS ----		
1979/80	2,500	2,433	97.3
1980/81	2,600	2,355	90.6
1981/82	2,450	1,967	80.3
1982/83	2,150	1,870	87.0
1983/84	1,875	1,866	99.5
1984/85	2,075	1,838	88.6

TABLE 2

U.S. WHEAT: SUPPLY AND USE

	1984/85	1985/86	1986/87
ACREAGE (MIL.ACRES)			
CONSERVATION USE ACREAGE	20.5	20.8	20.0-24.0
PLANTED	79.2	75.8	77.0-79.0
HARVESTED	66.9	64.6	64.0-67.0
YIELD/HARVESTED ACRE (BU/A)	38.8	37.4	37.5-39.0
SUPPLY (MIL.BU.)			
BEGINNING STOCKS	1399	1425	1787
PRODUCTION	2595	2419	2400-2615
TOTAL SUPPLY [1]	4003	3852	4190-4405
UTILIZATION (MIL.BU.)			
FEED AND RESIDUAL	411	350	325-425
FOOD AND SEED	743	760	770-785
TOTAL DOMESTIC	1154	1110	1095-1210
EXPORTS	1424	955	950-1100
TOTAL USE	2578	2065	2045-2310
ENDING STOCKS (MIL.BU)	1425	1787	1880-2360
FARMER-OWNED RESERVE	654	475	
CCC INVENTORY	378	500	
STORAGE LOAN	3	175	
FREE STOCKS	390	587	

[1] INCLUDES IMPORTS

Table 3

WHEAT CLASSES: MARKETING YEAR SUPPLY AND DISAPPEARANCE

YEAR BEGINNING JUNE 1	SUPPLY			DISAPPEARANCE				
	BEGIN-NING STOCKS	PRODUC-TION	TOTAL	DOMESTIC USE	EXPORTS GRAIN	EXPORTS PRODUCT	EXPORTS TOTAL	ENDING STOCKS MAY 31
	Million Bushels							
1981/82:								
Hard winter	541	1,112	1,653	361	714	40	1,115	538
Soft red	38	678	716	196	453	7	656	60
Hard spring	257	464	722	171	199	6	376	346
Durum	60	183	245	57	78	4	139	106
White	93	348	441	62	267	3	332	109
All Classes	989	2,785	3,777	847	1,711	60	2,618	1,159
1982/83:								
Hard winter	538	1,243	1,781	348	632	47	1,027	754
Soft red	60	590	650	251	316	9	576	74
Hard spring	346	492	842	195	232	7	434	408
Durum	106	146	256	61	55	4	120	136
White	109	294	403	53	206	1	260	143
All Classes	1,159	2,765	3,932	908	1,441	68	2,417	1,515
1983/84:								
Hard winter	754	1,198	1,952	503	646	58	1,207	745
Soft red	74	504	578	282	210	12	504	74
Hard spring	408	323	732	197	213	8	417	314
Durum	136	73	212	51	58	4	113	99
White	143	322	465	78	215	5	298	167
All Classes	1,515	2,420	3,939	1,111	1,342	87	2,540	1,399
1984/85:								
Hard winter	745	1,251	1,996	562	683	34	1,279	717
Soft red	74	532	606	289	247	6	542	64
Hard spring	314	409	725	171	177	6	354	371
Durum	99	103	207	46	57	4	107	100
White	167	300	469	86	207	3	296	173
All Classes	1,399	2,595	4,003	1,154	1,371	53	2,579	1,424
1985/86*								
Hard winter	717	1,239	1,956	570	445	35	1,050	906
Soft Red	64	370	434	225	130	4	359	75
Hard spring	370	449	822	180	140	4	324	498
Durum	100	106	210	53	40	4	97	113
White	173	255	430	82	150	3	235	195
All Classes	1,425	2,419	3,852	1,110	905	50	2,065	1,787

* Connell Estimates 11/13/85

CONNELL COMMODITIES

Table 4

U.S. WHEAT STOCKS AND USE

	WHEAT	HRW	SRW	HRS	DURUM	WHITE
	(Million Bushels)					
Oct. 1, 1985 Stocks	2935*	1520**	240**	672**	163*	340**
Less:						
- CCC Inventory	428	253	46	74	14	41
- Farmer-Owned Reserve	672	295	8	184	67	118
Free Stocks	1835	972	186	414	82	181
- Regular Loan	628	405	28	110	14	71
Available to Market**	1207	567	158	304	68	110
Oct-May Use**	1148	614	165	177	47	145

* USDA estimate
** Connell estimate

TABLE 5

U.S. CORN: SUPPLY AND USE

	1984/85	1985/86	1986/87
ACREAGE (MIL. ACRES)			
CONSERVATION USE ACREAGE	4.2	5.9	10.5-14.0
PLANTED	80.4	83.2	78.0-80.0
HARVESTED	71.8	74.8	69.5-71.5
YIELD/HARVESTED ACRE (BU/A)	106.6	116.6	111-113
SUPPLY (MIL. BU.)			
BEGINNING STOCKS	723	1379	3078
PRODUCTION	7656	8717	7715-8080
TOTAL SUPPLY[1)]	8383	10098	10795-11160
UTILIZATION (MIL. BU.)			
FEED AND RESIDUAL	4100	4300	4400-4600
FOOD, SEED, IND.	1065	1120	1140-1160
TOTAL DOMESTIC	5165	5420	5440-5760
EXPORTS	1838	1600	1550-1750
TOTAL USE	7003	7020	6990-7510
ENDING STOCKS (MIL. BU.)	1379	3078	3285-4170
FARMER-OWNED RESERVE	437	625	
CCC INVENTORY	240	500	
STORAGE LOAN	6	175	
FREE STOCKS	696	1778	

1) INCLUDES IMPORTS.

TABLE 6

CORN LOAN ACTIVITY

WEEK ENDING	1984-CROP LOAN ACTIVITY		1985-CROP LOAN ACTIVITY	
	OUTSTANDING 9-MONTH LOANS	CHANGE FROM PREVIOUS WEEK	OUTSTANDING 9-MONTH LOANS	CHANGE FROM PREVIOUS WEEK
	- - - - - - - - - - - MILLION BUSHELS - - - - - - - - - - -			
JULY 3	766.0	-13.5	--	--
JULY 10	752.3	-13.7	--	--
JULY 17	740.9	-11.4	--	--
JULY 24	725.7	-15.2	--	--
JULY 31	711.8	-13.9	0.1	+0.1
AUGUST 7	698.7	-13.1	0.5	+0.4
AUGUST 14	680.0	-18.7	1.2	+0.7
AUGUST 21	670.2	-9.8	3.4	+2.2
AUGUST 28	662.4	-7.8	7.8	+4.4
SEPTEMBER 4	656.4	-6.0	11.1	+3.3
SEPTEMBER 11	637.8	-18.6	16.3	+5.2
SEPTEMBER 18	614.7	-23.1	22.5	+6.2
SEPTEMBER 25	590.7	-24.0	35.6	+13.1
OCTOBER 2	566.7	-24.0	56.9	+21.3
OCTOBER 9	526.2	-40.5	93.3	+36.4
OCTOBER 16	493.6	-32.6	113.0	+19.7
OCTOBER 23	449.6	-44.0	156.6	+43.6
OCTOBER 30	419.4	-30.2	237.9	+81.3
NOVEMBER 6	388.4	-31.0	369.6	+131.7
NOVEMBER 13	347.6	-40.8	472.9	+103.3
NOVEMBER 20	317.6	-30.0	678.7	+205.8

SOYBEAN OUTLOOK

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For only the third time in history, U.S. soybean production exceeded 2 billion bushels. Suprisingly, this bumper crop was grown on only 63.2 million planted acres. The production increase was caused solely by hefty yields that were well above the average throughout the major soybean producing regions of the United States. The big increase in U.S. production is likely to encounter only modest increases in demand. Consequently, USDA is forecasting a record 1985/86 carryover of 615 million bushels. Season average prices could be a low $5.15 a bushel.

Although stocks could reach a record, the stocks-to-use of 33.6 percent would not be a record. The record, 34.6, was set in 1968/69. In that year, ending stocks totalled 327 million bushels, and the season average price was $2.43 a bushel, 7 cents below the loan rate of $2.50; CCC stocks climbed to unprecedented levels.

In 1969/70, a sharp turn around in soybean and soybean meal exports pushed total use above 1 billion bushels for the first time. Total use has not fallen below a billion bushels since. Soybean exports increased 33 percent year-over-year and domestic soybean meal use climbed 18 percent. By 1970/71, ending stocks had declined to 99 million bushels, and the stocks-to-use ratio was a tight 8 percent. The season average price was 78 cents above the $2.25 a bushel loan rate and CCC stocks declined to 2.5 million bushels from 171 million two year earlier.

In 1985/86 as in 1968/69, stocks will be high and prices will likely be low. The Government program will have an affect on prices. But there the similarity ends. The situation in oil crops in the mid-1980's is different than in the 1960's and the differences represent the themes I wish to develop this morning, They are:

- Competition - Both from other countries and from other oilseeds.
- Saturation - Traditional soybean meal markets may be reaching their limits to consumption, for a number of reasons.

The real growth potential is in the developing countries, particularly Latin American and the ASEAN nations. However, in the last two years, consumption has stagnated in these countries as well. The debt burden in South America, falling petroleum prices in the Middle East, and slow worldwide recovery from recession have limited economic growth and high protein meal consumption.

The centrally planned economies of Eastern Europe and the Soviet Union have increased imports of soybeans and soybean meal equivalent better than three-fold from 1969/70 to 1980/81. But imports have tapered off in the last few years.

The other important aspect of competition which I alluded to earlier is competition from other oilseeds. World oilseed production, less China and the United States, is expected to approch 100 million metric tons in 1985/86 up from about 80 million as recently as 1979/80. Of particular interest is the increase in production of sunflowerseed and rapeseed. European production of these two oilseeds has more than doubled from 1980/81. While soybeans are a temperate climate crop, sunflowers and rapseed are successful at higher latitudes. The potential for greater production of oilcrops in the cooler climates of Europe, the Soviet Union, and Argentina will provide further competition for soybeans in general and U.S. soybeans in particular.

The other major product of soybeans, soybean oil, faces a similar situation. With vegetable oils, competition is likely to be a more telling factor than stagnating demand. Worldwide demand for vegetable oils is likely to continue to grow at a steady pace. However, variability in supplies of various vegetable oils will likely determine prices.

The crush-for-oil situation that persisted for the last two years is over. Soybean oil prices averaged 29.5 cents a pound in 1984/85 but will probably average between 20 to 24 cents a pound in 1985/86. U.S. exports could decline to 1.5 billion pounds, the fourth straight year of declines.

India and Pakistan have been major soybean oil importers since the mid-1970's. The downturn in Indian soybean oil imports that occurred in 1984/85 and will likely persist in 1985/86 is due to improved domestic production of oil crops, notably peanuts, cottonseed and rapeseed. Furthermore, the availability of other oils and of soybean oil from South America provides additional competition. Soybean oil and soybean oil equivalents from South America have increased from insignificance in 1967/76 to almost 2 million metric tons by 1985/86. However, South American exports could decline slightly in 1985/86 as Brazil becomes a smaller net exporter. Palm oil which registered slightly under one billion tons in exports in 1969/70 has risen to nearly 5 million tons by 1985/86 compared to about 3.7 million tons in soybean oil exports.

World consumption of vegetable oils, less the United States and China, has climbed over 60 percent form 1974/75 to 1984/85. Soybean oil consumption rose 71 percent from 1974/75 to 1979/80; yet, from 1979/80 to 1984/85 the climb was barely 10 percent. The difference was made up by rapid increases in consumption of palm oil and sunflower seed and rapeseed.

Returning to competition, the United States faced no real competition in the world export markets until the mid - 1970's. Consequently, when a fall in prices created a surge in demand back in 1969/70, U.S. producers were the major beneficieries. By 1983/84, competitors' exports of soybeans and soybean meal on a soybean meal equivalent basis equaled U.S. exports. In 1984/85, competitors exports exceeded those of the United States. Furthermore, last year the seasonal marketing pattern changed: Brazil and Argentina, which together account for the overwhelming majority of U.S. export competition, exported aggressively through the spring and summer. By this fall they have essentially exhausted their supplies. Consequently, accumlated 1985/86 U.S. soybean exports were 12 percent above last year's levels by early November, and cumulative soybean meal exports exceed 1984/85's exports by nearly 40 percent.

USDA currently projects U.S. soybean exports to reach 675 million bushels in 1985/86 assuming no change in the present program. Soybean meal exports are forecast at 5.5 million tons. Notice that the gains in forecast U.S. exports are just about offset by declines in the projected exports of U.S. competitors. Early season marketings from the United States could make projected export totals look conservative. However, as South American production comes on stream next spring, the rate of U.S. exports could decline.

Although U.S. exports are expected to improve, they are well below those obtained in the early 1980's. Furthermore, the fact that U.S. gains come amidst declines in South America suggest a keenly competitive market place where demand is growing slowly, if at all.

Throughout the 1960's and 1970's the major market for U.S. soybeans and soybean meal was the European Economic Community. Canada and Japan to somewhat lesser extent were also importers. From 1964/65 until 1979/80, soybean equivalent imports by Japan, Canada and the EC more than tripled. This year-to-year rise in imports matches nicely the rise in exports for the United States. Since 1980/81, total imports to the EC, Japan and Canada have been flat. Two reasons may be responsible for this:

1.) Possible market saturation - During the post-war era, meat consumption rose dramatically in both the United States and Europe. Once the majority of people are obtaining sufficient intake of animal products, growth will slow. This point may have been reached in Western Europe, Japan and Canada.

2.) Slow economic growth in most of the rest of the world since about 1979, particularly in Europe, has probably limited consumption. Relatively high unemployment in Europe has also contributed to limiting animal products consumption. Stronger economic growth in high protein meal would undoubtedly boost consumption; however the rapid growth experienced from 1964/65 to 1979/80 is unlikely to be repeated in these countries with slow growing populations.

In summary, the current U.S. market situation in soybeans bears some resemblence to 1968/69 However, the world oilseeds markets is quite different in 1985/86 than in the 1960's. A slow growth market for high protein meals, at least among traditional buyers, and uncertainity in the rest of the market combine with competitive soybean production in South American and rising sunflower seed and rapeseed production particularly in Europe to limit demand.

In the vegetable oils market steady demand growth is expected but ample supplies of soybean and other oilseed crops and palm oil could hold prices down. These fundamentals will overhang the market in 1985/86 and could persist in years beyond.

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Outlook for red meats and livestock continues to be shrouded by large total meat supplies, financial problems in the farm sector and an expanding but sluggish economy. Bright spots emmanate from the supply side due to lower production costs and reduced red meat supplies in 1986, primarily beef, as the large liquidations of 1983, 1984, and early 1985 appear to be behind us. Expanding poultry supplies at steady to lower prices together with constrained consumer purchasing power, will hold down price gains for the relatively more expensive red meats.

Factors Affecting the Red Meat Industry

The Economy

While economic growth, as measured by real annual GNP, is expected to continue in 1986, the rate of growth will remain near to only slightly better than the rate expected in 1985, but well below the nearly 7 percent growth rate in 1984. Consumer purchasing power in 1986 is likely to remain near the 1985 level. Real incomes in 1984 increased nearly 6 percent, while the increase in 1985 will be only 1 to 2 percent, due almost entirely to a slowdown in nominal income growth, as the inflation rate has remained slightly below the low rate in 1984. Some modest increases in inflation during 1986 could result in real incomes rising near to slightly below this years levels.

Although the economy strengthened during the third quarter from the 1.1 percent growth in the first half, heavy consumer spending and a larger debt load are expected to hold down consumer spending in coming months. However, even as spending slows, inventories are in good shape, and could encourage some expansion to rebuild stocks. Most of the employment gains over the last few years have been in the lower paying service sector as jobs were lost in the manufacturing sector. However, recent signs point to a halt in the job declines in the manufacturing sector. Average weekly hours in manufacturing have increased slightly and overtime has remained steady, suggesting that an increase in demand to replenish inventories will probably be met by hiring more workers.

Median family incomes, in real dollars, increased in 1984 for the first time since 1979. The sharpest structural adjustments appears to be behind us

as the dollar begins to weaken and the manufacturing sector begins to at least stabilize. Smaller, but continued near record meat supplies and sluggish economic growth will provide only limited additional support for meat prices in 1986, particularly for the relatively more expensive red meat.

Production Costs

Inflation rates are likely to continue low in 1986, minimizing price increases for purchased farm inputs. While real interest rates remain high by historical standards, nominal rates have declined. The prime rate has declined from about 12 percent in 1984 to 10 percent in 1985, and is expected to remain about unchanged in 1986.

The bright spot for most livestock production costs in 1985/86 is the prospect for large grain and forage supplies at lower prices. World and domestic coarse grain production in 1985/86 is expected to be record large. Large world supplies and a continued relatively strong dollar are expected to result in further export reductions and another large stock buildup by 1986. Although stocks are expected to build, larger quantities are eligible and are expected to be placed under loan at the end of 1985/86, thus reducing available supplies for feeding and supporting prices of the free stocks. Corn production this fall increased 14 percent and grain sorghum production has risen 30 percent above the larger crops of a year ago, and nearly double the PIK and drought reduced crops of 1983.

The season average farm price of corn is expected to average $2.35 to $2.55 in 1985/86, about 8 percent below the 1984/85 average and 25 percent below the 1983/84 record. Grain sorghum prices may average $2.15 to $2.35 a bushel, down about 6 percent.

Protein costs are likely to rise modestly from the low levels in 1984/85 despite a 14 percent increase in production. Soybean meal stocks are expected to rise, but remain below the large beginning stocks of 1983/84. Soybean meal prices at Decatur may average $120 to $150 per ton in 1985/86 compared with $125.40 in 1984/85 and $188.20 two years ago.

Lower grain prices normally encourage an expansion in feeding however, reduced cattle and hog inventories are likely to hold feeding activity near to slightly below this years level, especially for fed cattle. While fed cattle marketings will remain large, slaughter weights are expected to decline below this years record. Much of the gain for livestock producers from lower feed costs are likely to accrue to feeder livestock producers, where returns have been poor for the last couple of years. The poor financial situation, particularly on many mixed crop-livestock farms and the need to generate additional cash flow, will hold down the price advances for feeder livestock and feeding activity in 1985/86.

Forage conditions in most areas are much improved in 1985 from the drought reduced levels which persisted in many areas from mid 1983 through spring 1985. Pasture and range feed conditions on November 1 were 79 percent, 5 points above conditions a year ago and the 1974-83 average for this date. Pasture conditions in the eastern half of the country and Central Great Plains were good to excellent. Poorest conditions continue in Montana, Wyoming, and the Dakotas. Hay stocks appear very favorable for the reduced livestock

numbers this winter. Increased hay acreage, particularly in the Central and Southern Great Plains, and good yields resulted in a record harvest in 1985. Alfalfa acreage and production were down 5 percent, but were more than offset by a 7 percent increase in grass and other hay. May 1 hay stock carryover plus the large harvest suggest a sizable increase in hay supplies to about 178 million tons. The number of roughage consuming animal units continues to decline; consequently use may drop about 3 percent to around 140 million tons. Prospects for fall and winter grazing are good and together with the large hay supplies should result in lower overwintering costs. The farm price of hay averaged $66 a ton in October, nearly $6 below a year ago.

Foreign Livestock Situation

World meat production is expected to continue its upward movement of past years through 1985. World trade in meat, after declining in 1984, is expected to resume an upward trend in 1985 and 1986. The decline in exports as a percentage of production, which indicated a weakness in total world meat trade in 1982 through 1984, is expected to return to an upward trend in 1985 which will continue through 1986. With increasing amounts of meat expected on the world market for the remainder of 1985 and through 1986, prices on all individual products will remain under downward pressure through 1986.

Beef

In 1977 world beef production reached 42.5 million metric tons (carcass weight equivalent). A metric ton is 2,204.6 pounds. Since that time production has stagnated, dropping to 40.5 million metric tons in 1980. In 1985, production is again expected to reach 42.5 million metric tons, but is expected to be lower again in 1986, dropping to about 41.5 million metric tons. In addition, static world demand in relation to a huge world beef supply has resulted in a decline in world beef prices. In 1986, large supplies will continue to put downward pressure on prices.

As in 1984, 1985 world beef exports are being dominated by the European Community, Australia and Brazil. The European Community in 1985 is expected to export about 800,000 tons of beef, Australia about 660,000 tons, and Brazil 510,000 tons. Together these countries should account for about 55 percent of world beef exports. In 1986 world beef exports are expected to set a record. The European Community is expected to maintain its 800,000 ton level, while exports from Australia and Brazil are expected to increase. For Australia, exports are expected to reach about 700,000 tons, well below the record of 1.2 million tons reached in 1978. Since then, Australia's exports have dropped mostly as a result of a series of devastating droughts that caused distressed slaughtering and the non-replacement of cattle. During this period, Australia's cattle numbers declined from 33 million to 22 million head. Australia now appears to be in the process of rebuilding its herds, although the process is expected to go rather slowly given the current depressed world climate for beef sales that Australia depends upon. From a low of 22 million head at the beginning of 1984, cattle numbers are expected to reach about 24 million head by the beginning of 1986. While quantities being exported among each of the big three are large, the European Community dominates the market at this time.

The situation in the European Community, while probably well known, is worth repeating. The EC has accumulated a large inventory of beef resulting from a pricing policy that encourages production. A program initiated by the EC in 1984 to reduce dairy cow numbers and control dairy production helped aggravate their beef oversupply situation. EC beef inventories are expected to reach over 1 million tons at the beginning of 1986. In addition, there has been no increase in domestic beef consumption. Since the early 1970's EC beef production has increased about 25 percent, while consumption has increased only about 4 percent. In comparison, pork production and consumption have each increased about 30 percent during this same time period.

For the most part, the United States is insulated from excessive imports of EC beef, due to restrictions on imports from foot-and-mouth (FMD) countries and a 5,000 ton import limit as part of the last round of MTN negotiations. Nevertheless, this huge EC beef stock is cause for concern because of its potential to displace beef exports from other countries (such as Australia and Canada) that could be forced to ship more beef to the United States. Canada implemented its meat import law this year in order to control the access of the EC's huge beef surplus and most likely Canada will implement its meat import law again in 1986 for the same reason. Australia could also be affected in 1986, but so far, the European Community, which is now moving beef into the Pacific area, has not yet entered the traditional Australia markets. It appears at this time that U.S. beef imports in 1986 will not be greatly affected by the large EC beef stocks and exports.

The United States is the largest import market for beef. However, imports have leveled off in recent years as a result of the U.S. Meat Import Law, agreements reached with some major exporting countries to control imports, and lower cattle numbers in the major exporting countries. In the early 1960's, the United States imported about 650,000 tons each year. By the early 1970's, imports were up to an average of about 830,000 tons per year and averaged almost 990,000 tons in the late 1970's. This year the quantity has declined to about 885,000 tons. Imports may be slightly higher in 1986 compared to 1985, but the quantity is expected to only slightly exceed 900,000 tons. In addition, the U.S. has not been as good a market for imported beef as it was during the late 1970's. Imports since 1980 have been below 900,000 tons per year after averaging over a million tons in 1978 and 1979.

U.S. beef exports are not expected to be affected by the huge EC stocks of beef in 1986. This is because the United States primarily exports grain-fed beef whereas the other exporters are competing for the grass-fed beef market. The United States accounts for only about 3 percent of world beef exports, but when compared with other beef exporting countries, the share is growing. In the early 1960's, U.S. beef exports averaged about 20,000 tons per year. This grew slowly to about 30,000 tons by the early 1970's, and averaged about 125,000 tons in the early 1980's. U.S. beef exports are expected to be 155,000 to 160,000 tons in 1985 and to reach 170,000 to 175,000 tons in 1986. This growth is based mostly on the strength of a 1983 agreement signed with Japan, the largest importer of U.S. beef. In 1984, Japan took slightly over 75 percent of our fresh and frozen beef exports on both a quantity and value basis. Exports to Japan are expected to continue rising for the next couple of years because of the agreement. Beef imports in 1985 may comprise near 8 percent of consumption, while exports comprise 1 to 2 percent.

Pork

U.S. pork imports totaled 325,535 metric tons, product weight, during January-September 1985, up 23 percent from a year earlier. The largest increases were from Denmark and Canada. In the last quarter of 1985, imports are expected to be near year-earlier levels due to a reduction in export subsidies by the European Community and weakening of the dollar. For all of 1985, pork imports may total 410,000 metric tons, up 15 percent from 1984. Imports of pork products are expected to decline about 5 percent in 1986.

The number of live hogs imported from Canada totaled 1,084,296 head during January-September, up 14 percent from the comparable period in 1984. Countervailing duties of Can$4.386 per cwt are slowing Canadian exports of live hogs. For all of 1985, imports of live hogs may total 1.2 million head, about 9 percent lower than in 1984. In 1986, the impact of countervailing duties is expected to reduce live hog imports to about 500,000 head, as Canadian producers will have had time to adjust their production. On July 1, the Canadian breeding herd was down 2 percent from a year earlier. Any liquidation of Canadian herds should be complete by mid-1986.

U.S. pork exports totaled 30,497 metric tons during January-September, down nearly one-quarter from a year earlier. The decline is due to reduced shipments to Japan. Denmark and Taiwan have captured most of the Japanese market lost by the United States and Canada. For all of 1985, pork exports may total 40,000 metric tons, down 24 percent from a year ago. In 1986, exports could decline an additional 6 to 10 percent. Pork and live hog imports in 1985 comprise about 8 to 9 percent of consumption, while exports comprise 1 to 2 percent.

Legislative Impacts

Emerging farm legislation is another uncertainty clouding the 1986 outlook. This legislation will impact the financial stability through crop loan and support programs which will offset feed grain prices and ultimately feeder livestock prices. In addition with record milk production expected in 1986 and with over a million excess dairy cows, milk diversion and/or whole-farm buyouts are being discussed along with milk support price reductions. Each 100,000 additional dairy cows slaughtered would add about 50 million additional pounds of beef at retail, largely in the form of hamburger and processing beef. Cow and nonfed slaughter are expected to decline in 1986, but dairy legislation will be a major factor in the actual level. Additional government purchases of beef, for schools and other programs, are possible if a diversion program forces additional dairy cows to slaughter.

LIVESTOCK

Widespread droughts in 1983 and 1984, poor returns to livestock producers and the need to generate additional cash flow have resulted in producers selling off part of the breeding herd, and retaining fewer replacement animals. As a result the base for future red meat production, particularly beef, has been reduced. Continued financial problems on many farms and ranches are likely to result in a slower turnaround and rate of expansion than under more favorable conditions.

Cattle

The cattle and calf inventory at the beginning of 1985 was slightly below 110 million head, 3 percent below a year ago, and along with the beef cow inventory was the lowest since 1968. The calf crop in 1985 is expected to decline for the fifth consecutive year, and a decline in 1986 is almost certain with a decline in 1987 likely. Improved forage conditions in most areas, and buildup in hay stocks has contributed to a sharply reduced cow slaughter from a year earlier. Cow slaughter was 10 percent below a year earlier in the first quarter, but averaged 20 percent below a year earlier in the second and third quarters as the grazing season got underway. For the year, cow slaughter may drop 18 percent. Although cow slaughter is down from the high levels of 1983 and 1984, cow slaughter as a proportion of the January 1 cow inventory does not suggest rapid expansion. The proportion of cows slaughtered this year should average slightly above 15 percent, the longterm average. Next year cow slaughter could decline another 6 to 9 percent, but the proportion slaughtered may still remain near 14 percent as closer culling and the need for cash flow continues. Total cow slaughter, however, may yet be influenced by dairy legislation. Reductions in beef cow slaughter for January through October are even more dramatic. Beef cow slaughter was down 15 percent, while dairy cow slaughter was down 19 percent. The weekly beef and dairy cow slaughter breakout continues to provide invaluable information on shifts in both sectors.

Even though cow slaughter has declined, the cattle inventory will continue to drop until larger numbers of replacement heifers are retained to stabilize and then expand the cow herd and the calf crop. The number of beef heifers being retained for herd expansion on July 1, was down 11 percent from a year ago. Improved forage conditions and stronger feeder calf prices may encourage some increase in heifer retention this fall. However, heifers retained this fall and bred next spring would calve in the spring of 1987 and would have only marginal impacts on beef production until 1988. Expansion will likely occur on farms and ranches where cattle are the only or a primary source of income, but at a much slower rate than the last couple of cycles. Individuals who have liquidated their herds over the past 3 to 4 years are not likely to be willing or able to reestablish a cow herd because of capital limitations.

Beef Supplies

Commercial cattle slaughter this year is expected to decline 4 percent from a year ago with fed slaughter up 2 percent and nonfed slaughter down 17 percent. In spite of the reduced slaughter, beef production may be slightly above year-earlier levels due to an unexpectedly large 4 to 5 percent rise in slaughter weights.

The heavy backlog of overweight cattle on feed that plagued the industry since early spring is largely behind us. Slaughter weights were record large in both the second and third quarters. They are lower now but still remain at near record levels this fall. Fed slaughter will continue to comprise a larger proportion of the slaughter mix resulting in continued high slaughter weights in 1986, but declining below the record 1985 weights.

Cattle on feed in the 13 quarterly reporting States on October 1, 1985 were 12 percent below a year ago, the result of a 5 percent gain in marketings this summer and a 13 percent decline in the number of cattle placed on feed.

Based on the July 1 cattle inventory, third quarter slaughter, and the October cattle on feed numbers, the supply of feeder cattle outside feedlots on October 1 was 3 percent below a year ago. The supply of feeder calves was down 5 percent, while the supply of yearlings rose 7 percent. With lower grain prices, a return to profits in the feedlot sector, and reduced red meat supplies expected through mid year, feedlot placements are likely to be relatively large this fall. In addition to the 7 percent rise in the yearling supply, additional heifers are likely available for feeding as heifer retention is expected to remain relatively low. Nonfed steer and heifer slaughter is also expected to decline again in 1986. Placements this fall are likely to rise near 1981-82 levels but remain somewhat below the large 1984 fall placements. First half placements may rise above the lower levels of first-half 1985. Marketings are likely to remain below year-earlier levels through next summer, with first-quarter marketings being down 4 to 6 percent from this year. Marketings are likely to remain 2 to 4 percent below this year's level in the spring and summer quarters, before rising to near or slightly above this years level next fall. The rate of heifer retention for breeding herds will have a strong impact on fed cattle marketings in second-half 1986.

1986 Beef Supplies

Beef production in 1986 is expected to decline 4 to 6 percent, the result of a 3 to 5 percent drop in slaughter numbers and a 1 to 2 percent drop in slaughter weights. Fed slaughter may drop 2 to 4 percent and nonfed slaughter may be down 9 to 11 percent. Fed beef supplies would still be relatively large in 1986, but should be more manageable if weights are held down.

Hogs

Hog producers had reduced their breeding inventories 3 percent from a year earlier, as of September 1, the lowest inventory since 1975. The market hog inventory also declined 3 percent to the lowest level for this date since 1982. Although the breeding inventory has been pulled down over the past year, favorable weather during the breeding and farrowing seasons and perhaps better management practices have resulted in record numbers of pigs per litter in the 3 quarters of 1985 in the 10 quarterly reporting States. Hog producers intentions in September were to farrow fewer sows in the next 6 months than a year earlier. But intentions for the December-February quarter were just fractionally down from a year earlier. The September market hog inventory and farrowing intentions suggest that pork production may average below year-earlier levels this fall and through mid 1986. Realization of lower feed costs would normally encourage more expansion, but poor return's and continued financial pressure, particularly in the North Central region, are likely to hold down any expansion plans. Many larger hog producers incurred new debt in the latter 1970's as new facilities were built or older facilities remodeled. These debts likely remain as returns during the 1980's have been poor. In addition, land values, the security for many of these loans, through this fall continues to decline in the North Central region where pork production is centered.

In June, producers planned to farrow 4 percent fewer sows in September-November, but in September they indicated only a 2 percent decline. Producers appear to have pretty well stopped liquidating their breeding herds. Sow slaughter has been running well below the large levels of 1983 and

1984. The difference now is that fewer gilts are being retained. Large barrow and gilt slaughter through mid November does not suggest any sharp increase in gilt retention. However, lower grain prices this fall and stronger hog prices in late 1985 could result in further gilt retention and increased pork production in late 1986.

Pork Supplies

Pork production in 1985 will be about 1 percent below a year ago, as a 1 percent decline in slaughter is offset by a nearly 1 percent gain in slaughter weights. Record pigs saved per litter, extremely favorable feeding conditions, and a larger gilt slaughter resulted in production above a year ago in the second and particularly the third quarter in spite of breeding herd reductions. First half production was also boosted by a sharp increase in live hog imports for slaughter from Canada. Pork production is expected to decline 4 to 5 percent from a year ago this fall the quarter. A year ago slaughter was supported by live hog imports and continued breeding herd cutbacks.

The rate of gilt retention will impact production patterns in 1986. Stronger expansion of the breeding inventory than now expected would result in further reductions in first-half slaughter, but even greater increases in slaughter in late 1986 and in 1987. Pork production, for all of 1986 may decline about 1 percent. Production this winter may be only slightly below a year ago. Only a modest seasonal rise is expected in the spring and production compared to a year ago could drop 1 to 3 percent. Summer levels are likely to decline 3 to 5 percent from the large 1985 slaughter. Fall-quarter production may rise 3 to 5 percent from this falls' level, the beginning of expansion which is likely to carry into 1987.

Sheep and Lamb

The sheep and lamb inventory is expected to decline again in 1985, but the decline may be small. Improved forage conditions and lamb prices at or near record levels for most of the year are likely to begin to stabilize the inventory. As with the other red meat sectors, liquidation of breeding animals is over but the rate of ewe lamb retention remains low. Production this year and in early 1986 will likely be supported by a high lambing rate, due to favorable weather conditions.

Lamb and mutton production in 1985 may total about 350 million pounds, down 6 percent from 1984. Production has been supported by a 3 to 4 percent gain in slaughter weights. Production in 1986 is likely to drop again due to favorable returns in 1985 encouraging the retention of more ewe lambs for breeding and the smaller inventory. Production in 1986 may drop another 8 to 10 percent, even with weights remaining near this year's higher levels.

Red Meat Supplies to Decline

Reductions in hog, cattle and sheep inventories, for reasons already covered, since 1982 have supported per capita red meat supplies near 144 pounds. Total red meat and poultry consumption has reached near record highs in each of the last three years, as poultry supplies continue to expand. In 1970-84, per capita red meat and poultry consumption averaged 203 pounds, in 1985 a record 213 pounds will be consumed. In 1986 per capita supplies of

meat may decline to about 210 pounds, but would still be the third largest consumption level on record, exceeded only by the 211 pounds consumed in 1984 and the 1985 record.

Sharpest year-to-year declines will occur in the beef sector, with most of the drop occurring in nonfed beef products--i.e. hamburger and processing beef supplies. Per capita beef supplies may drop to about 74 pounds from the herd liquidation years (1983-1985) consumption of 78.5 pounds. Pork supplies may drop about a pound per capita in 1986 from the fairly static 62 pounds consumed each year since 1983. Red meat supplies may reach the lowest levels about mid year. However, supplies will begin to expand seasonally and year-to-year as pork supplies rise in the fall. Veal and lamb and mutton supplies per capita are also likely to drop again next year, but the declines will be small, about a tenth of a pound per person, with both averaging near 1.5 pounds per capita.

PRICE RISE TO BE CONSTRAINED

Conditions behind the likely supply, and consequently red meat consumption, have been set, the issue then is at what price will these expected levels of meat sell in the retail market and what will be the farm level price as they are derived from retail prices and producer expectations. Factors affecting demand conditions--consumer purchasing power, sensitivity to relative meat prices, and tastes and preferences--are expected to be little changed from 1985.

Retail Prices

At the center of attention on retail prices in 1985 has been the farm-to-retail spreads, particularly for beef. Both the retail price for Choice beef and the beef spread remained fairly stable through much of the 1980's. However, the beef spread reached a record level of $1.17 per pound in July as a large supply of overfinished cattle burdened the market resulting in sharply lower fed cattle prices. Retail price changes typically lag behind changes in live animal prices. Retail prices have declined since July, and Choice fed cattle prices have risen since September. The result has been a reduction in the beef spread and continued favorable Choice beef prices at retail. Beef spreads in 1985 are expected to average 8 to 10 percent higher than in 1984. Spreads are likely to decline 2 to 5 percent in 1986, but remain above the static to declining 1981 to 1984 average. Spreads for pork have risen also, but at more expected levels. The spread in 1985 may rise about 6 to 8 percent, and is expected to remain about unchanged in 1986.

Retail prices for Choice beef may average about $2.33 a pound in 1985, down about 3 percent from the 1984 average of $2.40. With reduced beef and total red meat supplies in 1986, retail beef prices may rise but still average near 1984 levels. Large supplies of relatively less expensive meats and a continued sluggish expansion will hold down price gains to near the general inflation rate.

This year retail pork prices will likely average near 1984's $1.62 per pound. Reduced total meat supplies and a modest decline in pork supplies, at somewhat more competitive relative prices than beef, may result in pork prices also increasing 3 to 5 percent in 1986, about the same as beef. However,

prices are likely to remain below the record prices set in 1982, or even the $1.70 average in 1983.

Cattle Prices

Choice fed steer prices at Omaha have rebounded from the $52 per cwt summer quarter lows to the lower $60's in early fall. For the year, prices may average $58, nearly $7 below the 1984 average. Reduced beef supplies and some decline in fed cattle marketings, together with a narrower marketing spread, will likely result in prices averaging near the mid $60's in 1986. Strongest prices are likely in the spring and early summer, before total meat supplies start to expand beginning next fall.

Yearling feeder cattle prices at Kansas City have also rebounded from the $60 per cwt lows this summer, but remain below the upper $60 average in early 1985. Prices are expected to average about $65 this year, slightly below 1984. After averaging slightly below fed cattle prices in 1984, the spread between fed and feeder cattle widened to $7 per cwt, reflecting the reduced feeder cattle supplies and lower feeding costs. Prices in 1986 are expected to rise, but as feedlot operators remain more conservative bidders, may average only about $67 per cwt, $2 to $3 above fed cattle prices.

Feeder calf prices are likely to remain strong in 1986 as the calf crop continues to decline while feed and forage supplies remain favorable. Prices will likely remain $5 to $7 above yearling prices. Lower than expected grain prices or sharper increases in beef prices could result in further price gains.

Utility cow prices at Omaha have averaged $39 to $40 per cwt for the past 4 years. This year prices may average near $39. With reduced cow slaughter expected again in 1986, prices are expected to strengthen. However, without strong incentives for expansion and even sharper slaughter reductions, prices are likely to remain in the low $40's, only slightly above recent levels.

Hog Prices

Hog prices at the 7 major markets in 1985 averaged the lowest in several years. Prices for barrows and gilts will likely average about $44.50 per cwt this year—$3 to $4 below the 1983 and 1984 levels. Large total meat supplies, large live hog and pork imports, and lower prices for other meats have pressured hog prices down. In 1986, prices may return to the upper $40's as pork and particularly total red meat supplies decline. Higher than anticipated rates of gilt retention particularly in late 1985 - early 1986 could result in even higher prices. However, total meat supplies remain large and will continue to constrain price advances.

Sheep Prices

Strong competition for a smaller supply of slaughter lamb has resulted in Choice lambs at San Angelo averaging near $70 per cwt—$8 above 1984. Further reduction in lamb supplies in 1986 as more ewe lambs are retained for expansion could result in prices averaging in the lower $70's.

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Fewer Fed Cattle Marketings

Month after month of declining prices and mounting financial loses took its toll. Estimated returns to cattle feeders chalked up another long string of losses in 1985. That pushed feedlot inventories on October 1 down to 7.9 million head, a million head less than a year earlier and the lowest fall count in 17 years.

The sharp cut in feedlot inventories paved the way for a rapid price rebound. Choice steers prices climbed from near the $50 mark in mid September to the upper $60's in mid November. That price rebound carried average feeding returns back into the black for the first time since early in the year.

The 12 percent cut in feedlot inventories on October 1 reflect both aggressive marketing and a sharp cut in feedlot placements. Fed cattle marketings during the summer were reported 5 percent above last year and the highest since 1972. And, those larger marketings came from a beginning summer inventory that was about the same as a year ago.

The higher marketing rate last summer finally reduced the backlog of market-ready cattle that has kept a firm lid on prices since last winter. Third quarter marketings were the second largest on record and the highest for the quarter since 1972.

The long-awaited pickup in marketings compared to feedlot inventories resulted in the smallest carryover, of inventory into the fall quarter in more than 15 years. Combine that small carryover with the sharp cut in placements and the result is a steep decline in inventories that promise a smaller fed cattle supply.

Another indicator of how current feedlot inventories have become--the number of cattle on feed more than 120 days--dropped 17 percent below a year ago on October 1. Like some other indicators, that's the smallest on record. And, it stands in sharp contrast to the 25 and 30 percent year to year increases in long-day cattle inventories that occurred regularly last spring and summer.

Feedlot placements last summer were trimmed more than 12 percent under a year ago. That's the third consecutive quarter of sharp reductions in feedlot placements. It reflects the financial losses experienced by most cattle feeders in recent months. The strong price premuims held by feeder

cattle over fed cattle and low deferred futures prices also restricted placements.

Smaller feedlot inventories combined with the decline in summer feedlot placement means fewer fed cattle marketings this fall and winter. Cattle feeders indicated intentions to market about 5.3 million head during the October-December quarter, 4 percent fewer than last year. However, past marketing patterns and the weight distribution of feedlot inventories makes it doubtful that total will be reached. So, fed cattle marketings may decline slightly more than feeder's intention suggest.

Fourth quarter fed cattle marketings will be below a year earlier for the first time in a year and a half. And, the decrease from summer to fall may be near 12 percent, the sharpest seasonal decrease on record.

Along with fewer fed cattle, nongrain-fed marketings are also expected to remain below a year earlier. Cow slaughter has averaged nearly 17 percent below last year through the first three quarters of 1985. A similar decrease is expected during the fourth quarter. That will help pull total cattle slaughter this fall about 8 percent under last year. But, with fed cattle marketings making up a larger proportion of total slaughter, average slaughter weights probably won't be decreasing very much from recent high levels. So, beef production this fall may be about 3 percent below last year and more than 6 percent under last summer's output.

Led by the decrease in beef production, total red meat supplies will be winding down from record high levels. But, part of that decrease will be partially offset by continued increases in poultry production. Still, total meat supplies are likely to fall about 1 percent below last year.

Choice steer prices in the Southern Plains rebounded from the low $50's in mid September to the upper $60's in mid November. Further price strength is likely as fed cattle supplies tighten into the early winter.

Fed cattle marketings next winter and early spring will be primarily dependent on feedlot placements this fall and the effect of winter weather patterns on gains. The sharp cut in feedlot placements last summer means that feeder cattle supplies this fall will be larger. And, the delay in placements combined with excellent pasture conditions in most areas last summer means that in-weights will probably be higher. So, those cattle placed on feed this fall can be turned more rapidly than usual--if "mother nature" cooperates.

Another mild winter, like last year would likely result in bunched marketings again by mid winter. A more normal weather pattern in the commercial feeding areas would reduce gains and spread out marketings. The potential price impacts of either pattern are fairly obvious.

Over the past 15 years, fall feedlot placements have averaged more than 25 percent above the summer quarter. Allowing for a larger than usual seasonal increase, its unlikely that fall placements will exceed last year. Then, fed cattle marketings during the first half of next year are likely to average about 5 percent below 1985.

Nongrain-fed marketings are expected to remain below a year earlier over the next several months, but reductions will be smaller than they were in 1985. So, total cattle slaughter is likely to be about 5-6 percent under a year earlier during the first half of 1986. And, that would be 3-4 percent below the fourth quarter of 1985.

Beef production will also be trending lower with the decreases in slaughter. But, declines will be more modest as carcass weights continue historically heavy. Those heavier weights don't necessarily mean the redevelopment of a market backlog of overfinished cattle. Rather, the continued increases in the proportion of fed cattle in the slaughter mix will naturally keep average weights high.

Choice slaughter steer prices are expected to average in the mid to upper $60's during the first quarter of 1986 and slightly higher during the spring quarter. But, seasonal increases in beef production are likely to pressure prices lower again next summer, falling to the lower $60's early next fall.

The rebound in fed cattle prices has restored a measure of profitability to cattle feeding after a string of monthly losses. Projected average breakevens for feeding yearling steers range mostly in the lower $60's on cattle to be marketed in early 1986. So, prospects are good that 1985 will end much as it began, with modest profits. And, it looks like that trend will continue into the new year.

Cattle Inventory Continues to Fall

The mid-year cattle inventory reflected continued cow liquidation and that points to smaller calf crops and further decreases in beef production.

At 116.3 million head, the July 1 cattle inventory estimated by USDA was 4 percent below a year earlier. And, that was the smallest herd count since before 1973 when mid-year estimates were begun.

Although cow slaughter during the first half of 1985 dropped 14 percent below last year, the cowherd continued to shrink. Beef cow numbers on July 1 were estimated at 35.3 million head, 7 percent under 1984, while the dairy cow inventory increased nearly 2 percent to 11.1 million head. The total cowherd, at 46.3 million head, was 5 percent below a year ago.

The decrease in cow slaughter was not enough to offset the sharp drop in the number of heifers being added to the cowherd. Back in January, producers reported intentions to add 4 percent fewer heifers to the cowherd. But, the mid-year inventory report suggests that the number of heifers actually entering the herd during January-June was about 13 percent below a year earlier.

Cattlemen have been diverting large numbers of heifers from the cowherd into feedlots for the past year. On July 1, the inventory of heifers on feed was 7 percent larger than a year ago and the second largest on record for that date.

The reduction in cow numbers is likely to continue. At mid-year, cattlemen were holding about 11 percent fewer heifers as beef cow replacements. There is little reason to expect herd replacements to offset

slaughter during the last half of the year.

That smaller cow herd, in turn, translates into smaller calf crops and fewer feeder cattle.

USDA's first estimate of the 1985 calf crop--41.1 million head--was 3 percent below a year ago. That will mark the fifth consecutive year of successively smaller calf crops. If that estimate is realized, it will be the smallest calf crop in 25 years.

The string of declines in the size of the calf crop probably won't end here. With a smaller cow herd on January 1, we can expect fewer calves in 1986 and probably 1987 as well.

Feeder cattle supplies are likely to tighten further as the calf crop gets smaller. However, the sharp cut in feedlot placements last summer means that the available supply of feeder cattle this fall is larger than a year ago. Estimated supplies of yearling feeder cattle outside feedlots on October 1 was about 4 percent above 1984. But, with the smaller calf crop, the number of calves outside feedlots were nearly 5 percent below last year. Total feeder supplies were down about 3 percent. Feeder supplies will become tighter this winter as feedlot placements increase seasonally this fall and the smaller calf crop continues to restrict numbers.

Prices for 7/8 wt. feeder steers are expected to average in the lower $60's per cwt. this fall. Tighter supplies, low grain prices, and favorable feeding margins are likely to push feeder prices into the high $60's by late winter. However, prices will likely come under seasonal pressure again next spring, dropping to the mid $60's next summer and the low $60's next fall.

Calf prices are likely to remain at a strong premium to both feeder and fed cattle prices. Steer calves are expected to average near $70 this fall and may climb near the $80 mark next spring on the strength of seasonal demand. But, a weaker trend next summer may take fall calf prices back down toward the $70 area.

While those price levels are not substantially higher than the past year, declining feed costs will help improve returns. The most favorable price developments will occur when cow numbers begin to be rebuilt. That's not likely to happen near term, but smaller feeder supplies, lower feed costs, and higher slaughter cattle prices will help support feeder and calf prices.

Lower Inventories, Pork Production Stabilizes

Hog producers continued to pare inventories last summer. The sharp slide in hog prices was probably the key factor behind the additional cutback. Those lower prices more than offset the fall in grain prices, keeping hog producers returns in the red. Early fall inventories of hogs and pigs on farms dropped to their lowest levels in a decade.

The breeding herd remains historically small. That would typically suggest lower market hog numbers. But, producers are offsetting the smaller breeding herd by increasing productivity. The proportion of sows farrowing out of the total breeding herd inventory has been increasing. And, average litter sizes have also trended upward. So, market hog numbers won't be reduced much even with fewer sows farrowing.

Hog prices rebounded sharply earlier this fall from the upper $30's to the mid $40's. That will help put returns for many hog producers back in the black. Feeding margins are also getting some help from lower feed costs. But, that could prove to be temporary as large quantities of feed grains move under the loan program.

The upsurge in hog prices has been motivated mostly by a much smaller than usual fall increase in hog slaughter. During the summer quarter, hog marketings averaged about 6 percent above last year. July and August daily slaughter averaged nearly 7 percent over a year ago, but September marketings were slightly under last year. And, October slaughter dropped about 5 percent below a year ago.

Farm-retail price spreads for pork are expected to narrow as pork production declines. And, pork imports have moderated from record levels earlier this year. Those changes should help support further increases in hog prices.

Hog Slaughter, Pork Production

Despite a 3 percent drop in the number of sows farrowing, the March-May pig crop was estimated about equal to last year. These hogs will supply the bulk of market hog supplies this fall. But, with normal marketing patterns, hog slaughter may drop 3 percent under a year ago.

Pork tonnage is expected to decline slightly less than slaughter. Average marketing weights have been consistantly heavier than a year ago. That trend is likely to continue as long as feed costs remain relatively low and weight discounts are small.

Pork supplies continue to be bolstered by imports. But the rate of increase has slowed since the first half of the year when pork imports were nearly 10 percent of U.S. production. Pork imports are likely to remain near a year earlier during the months ahead.

Farm retail price spreads for pork have been much wider than a year ago since last winter. In August, retail pork prices averaged near $1.62 per lb., down about 4 cents from a year ago. But, hog prices at Omaha averaged near $44.00 per cwt., nearly $9 below last year. The farm-retail price spread, at 92 cents per retail pound, was about 8.5 cents more than a year earlier. That wider price spread is equivalent to about $5.00 per cwt. for live hogs. Or, alternatively, consumers were "purchasing" $49.00 hogs rather than the $44.00 received by hog producers.

Although price spreads for pork typically increase from summer to fall, most of that increase has already occurred. Spreads are likely to narrow later this year as pork production declines seasonally.

Hog prices this fall are expected to average in the mid $40's, but may well climb to the upper $40's before year end. That's up from the low $40's late last summer, but still well below last year.

The June-August pig crop in the 10 major hog producing states was reported 1 percent under a year ago. That suggests first quarter hog slaughter about equal to last year, but 5 percent below the fall quarter. Prices at major terminal markets are expected to increase seasonally,

averaging in the high $40's, but reaching into the low $50's at times next winter.

Expansion to Develop Slowly

Farrowing intentions reported by producers back in September indicated plans to farrow 2 percent more sows during the September-November period and about the same number as last year during December-February. Those pig crops are already determined and breeding decisions are now being made for the March-May pig crop. The first reading on producer plans for the March-May period will be in the December USDA Hogs and Pigs Report to be released on December 23. Several factors suggest that producers will go slow on expansion and if it does come next spring, it will be at a modest rate.

Perhaps the biggest single factor working against any major expansion yet this winter is the lack of profitability. Returns to hog producers last summer will probably keep fall farrowings near the intended 2 percent cut. And, returns during August-October when sows to farrow during December-February were bred, were only at about breakeven levels. That doesn't provide much incentive to expand numbers.

But, by early November, returns were moving back into the black as hog prices climbed to the middle $40's at major midwestern terminal markets. That strengthens the expansion arguement for increases in March-May farrowings. And, hog prices are expected to increase further this winter, averaging in the upper $40's. However, with nearly two-thirds of the corn crop eligible to go under the loan program, rising feed costs may offset much of the benefit of rising hog prices.

So, if corn prices this winter move back new loan levels in the $2.50-$2.60 area. That would push average breakeven prices for maney farrow/finish producers back into the middle $40's. Not much incentive for expansion there.

And of course, for those looking to the futures market to hedge profitable price levels before expanding have had little to choose from. The April through October futures contracts in early November were trading mostly in the lower $40's.

So, incentives for expansion are less than over-whelming. But if hog prices rebound back to an upper $40's average next summer from the mid $40's in the spring quarter--and fed costs remain low--a firm expansion base will have been established.

Profit margins are likely to remain narrow, but positive for established producers during the next few months. That is not expected to encourage any major near-term expansion. But, the risk remains that production levels may rise. Prudent managers will continue to strive for increases in efficiency and monitor pricing opportunities closely as a way to manage adverse price risk.

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Broiler and turkey producers are expected to expand output in 1986, but egg production may be off slightly. The large harvests of corn and soybeans are expected to keep costs near 1985. Competing meat supplies are expected to decline and the general economy may continue to grow modestly. Thus, broiler and egg prices are expected to remain relatively strong.

Factors Affecting the Poultry Industries

Feed Costs

Last spring, farmers increased the number of acres planted to corn but reduced those devoted to soybeans. Growing conditions were favorable and yields for both corn and soybeans were up from last year. The result has been increased production of both crops and lower prices. Weak export markets for corn and beans have contributed to the lower prices and an increase in expected ending stock levels.

During 1986, feed ingredient prices will likely be near 1985. The farm price of corn averaged $2.65 a bushel in 1984/85, but may average $2.35 to $2.55 in 1985/86. The relationship between oil and meal has begun shifting; oil prices have slipped and meal prices are increasing. This movement is back toward the more normal relationship that prevailed before oil prices strengthened. As a result, prices for 44-percent protein soybean meal at Decatur in 1985/86 may average $120 to $150 per ton, compared with $125.40 in 1984/85.

The Economy

The Gross National Product (GNP) in 1985 continues to grow but at a much lower rate than the 6.8-percent increase recorded in 1984. During the first half of 1985, GNP grew at a yearly rate of 1 percent but has increased in the second half. There is some concern that consumers slowed spending in the fourth quarter since they took on extra debt in the third. Even if there is a slight slowdown, GNP should still increase faster than in the first part of the year. Still, a slowdown in consumer spending might affect away-from-home consumption and sales of convenience foods, which are important markets for the poultry industry.

The economy is expected to continue growing in 1986 but at a relatively slow rate. This implies that consumer demand will remain about the same as in 1985. Modest economic growth may result in slightly higher employment, which

could mean continued strong away-from-home consumption and sales of convenience foods. Thus, the further-processed broiler and turkey items will likely continue to make up an increasing proportion of producers' output.

Historically, consumers' incomes have continued upward even while unemployment bounces along with the prevailing economic conditions. It is possible that income may not affect food expenditures as much as it once did, since consumers have more income to spend for both food and non-food items. In the last decade, the percentage of consumer incomes spent for both red meat and poultry have declined. A better perspective on meat demand could be gained through an improved identity of consumers' preferences.

More In-Depth Marketing

With major production efficiency already achieved, the poultry industry is putting more of its earnings in the development of new approaches to product marketing. The industry and its advertising firms already have a vast storehouse of knowledge of consumer habits and desires. They know that consumers basically want a variety of appetizing and appealing products that will satisfy nutritional and dietary requirements at prices they are willing to pay. To support a higher standard of living and increasingly active lifestyles, more family members are compelled to work full and part-time jobs. Thus, there is less time to prepare, cook, and clean up after meals. This situation is especially true where people commute relatively long, distances to and from work. To counter this limited time situation, consumers are seeking more convenience-type foods in grocery stores, or are stopping by carryout restaurants to pick up ready-to-eat foods. They also are seeking quicker ways to prepare ready-to-cook foods as indicated by the growing sales of microwave ovens in recent years.

Convenience-type foods certainly are costlier than foods that require preparation and cooking. Consumers are weighing the added cost of convenience foods against the time it takes to prepare a meal from scratch in an effort to meet their planned activity priorities. Consumers are attending more sports and entertainment events, and they are also traveling more than ever. As long as energy sources remain in relatively good supply and reasonably priced, further expansion of the consumers' active lifestyles is likely.

Today's consumers know less about food preparation than their parents and grandparents. This shift in lifestyle is also a major factor supporting the surging demand for convenience foods, both at and away from home. Large supermarkets and even single establishments are recognizing this change and have added ready-to-eat meals, deli items, and salad bars as part of their operation. Poultry products have become important entrees for many of these operations.

Brand Names and Advertising

Logos have been used by some old line poultry firms for more than 60 years. Thus, the use of brand names in the poultry industry is not new. In the past decade, however, advertising of brands by the poultry industry has accelerated, and a greater audience is being reached than ever before. The power of advertising has had a considerable influence on consumer preferences for food brands since World War II—particularly for further processed food items. Today, some poultry processing firms have sizable and growing accounts

with large well-known advertising agencies. Among other factors, some advertisements now draw heavily upon consumer concerns about health and diet aspects of foods they purchase.

The results of a trade paper's recent survey of poultry processors across the country indicated that brand-marketing will take on even more importance in the future. This generally depicts fierce competition among producers in the industry. An added incentive of brand advertising is it may also provide a producer with market penetration for those new products that have been successfully market-tested. Thus, the role of brand-marketing in the poultry sector will continue to expand as firms focus on stepping up product consumption by enticing more consumers to buy their product.

Poultry Processors and Marketing - How Far Will They Go?

The vertical integration of the poultry industry has been an integral product marketing system for more than 30 years. This means that ownership/management has virtual control over all production, processing, and marketing activities of a firm.

Business analysts' reports indicate that successful fast-food chains are recession resistant, produce consistent earnings, and generally have healthy balance sheets. However, poultry processors generally seem to be content to expand only their sales of ready-to-cook items to food service outlets and frozen ready-to-eat products to grocery stores. Attempts by a few broiler integrators at operating fast food and other restaurants that feature chicken have not been widespread. Under the present market structure, there is intense competition in the fast food and restaurant industry, which makes it a risky venture for new firms to enter. Restaurant operations deal directly with the general public and require another broad area of expertise in product marketing. Thus, it seems unlikely that there will be any major attempt by integrators to move into the fast food or restaurant business under their own name.

Broilers

With costs of production about stable and output of red meat down, broiler producers are expected to increase output during the remainder of 1985 and through 1986. Prices of broilers are expected to remain stable in 1986 because of smaller competing meat supplies.

Production To Increase

Production of broiler meat in federally inspected plants during the first three quarters of 1985 was 5 percent above 1984's 9.8 billion pounds. The number of birds slaughtered was up 4 percent and the average weight was up 1 percent. The pattern of increased bird size was continued in 1985. With continued growth in further processing and the strong prices for the breast meat, producers have an incentive to raise larger birds.

Producers increased the number of pullets entering the hatchery supply flocks and were not particularly short of hatching eggs as in some years. However, changes in lending practices and the farm financial situation has made financing the building of new grow-out houses more difficult. As a

result, some areas of the country are short of grow-out houses. This situation was noticeable in the third quarter when broiler placements were up less than in the second quarter because producers did not want to crowd the birds during the summer. Based on the chicks hatched for fourth-quarter 1985 slaughter, production may be up 4 percent from last year.

An inventory of broiler hatchery supply hens is not available so the cumulative pullet chick placements 7 to 14 months earlier are used to approximate the size of the flock. In early 1986, cumulative pullet placements will only be up 2 percent from this year. Producers may keep their hatchery supply hens a few days longer, resulting in a larger increase in the supply of eggs for hatching next year. In 1986, production is expected to increase 4 percent from 1985's 13.6 billion pounds. A larger increase in output in early 1986 is not expected because of the hatchery supply flock and the continuing tight supply of grow-out houses.

Prices To Remain About Steady in 1986

With increased supplies in 1985, wholesale prices of broilers in the 12 cities averaged near 50 cents per pound during the first three quarters, down from 57 cents in 1984. Prices were very strong in first-quarter 1984 when reduced supplies and the threat of further reductions because of avian influenza strengthened prices. As supplies increased in 1984, prices declined and averaged 50 cents per pound in the fourth quarter. During fourth-quarter 1985, prices are expected to average near last year.

Prices for broilers in the 12 cities during 1986 are expected to average around 50 cents per pound, about the same as in 1985. The additional broiler production is expected to be offset by reduced red meat supplies. The demand for further-processed items is expected to remain strong and help strengthen the whole bird prices. Exports of whole birds and parts may slip slightly from 1985 levels, continuing the decline since 1981.

World Production

Production of broilers by all countries in 1986 is expected to be up 3 percent from 1985. Brazil and France, major exporting countries, are expected to decrease exports while production is rising in Brazil but declining slightly in France. Output in Brazil, France, and Hungary, another major exporter, fell during the past 2 years as output in the major importing countries, climbed. Mideast countries such as Saudi Arabia and Iraq are building their own production facilities and demand for imports is dropping. The Soviet Union cut its imports of chicken from 200,000 metric tons in 1983 to 73,000 this year as its own output is up. Output by the major exporters is forecast to increase in 1985 and 1986 mainly for domestic consumption.

The United States is a major supplier of poultry parts in the world market. Now that the market for whole birds is shrinking in the Middle East, other countries, such as Brazil, which specialized in whole bird trade are looking to the parts market as a way to expand exports. Brazil is already gaining a larger share (along with Thailand) of Japan's poultry imports at the expense of the United States. U.S. exports are up so far this year as increased shipments to Hong Kong, Egypt, and Mexico make up for declines in Japan and Canada.

Turkeys

Turkey production is up in 1985 and output is expected to rise again in 1986. Prices for turkeys were strong in third-quarter 1985 and continued strong most of the fourth quarter. Prices in 1986 may weaken relative to this year.

Production

Output of turkey meat from federally inspected plants during January through September totaled 1,968 million pounds, up 9 percent from 1984. The number of turkeys slaughtered was up 7 percent and the average liveweight was up 2 percent. Based on poults placed that could be slaughtered in the fourth quarter and assuming a similar slaughter-to-poults-placed relationship as existed in the third quarter, output in the fourth quarter may be 10 percent above 1984's 775 million pounds.

Producers have continued placing additional poults for 1986 slaughter. The favorable returns in second-half 1985 are encouraging producers to place more birds. Output of turkey meat in first-half 1986 is expected to increase 6 to 9 percent from 1985 and the second half may be up 4 to 6 percent from this year.

Stocks of frozen turkey at the beginning of this year were very low, but have since been rebuilt. Stocks on October 1, 1985, were 14 percent above 1984's 391 million pounds. In 1984, movement of turkey was excellent at Thanksgiving and some retailers dipped into their Christmas stocks to fill Thanksgiving needs. As a result, prices were very high in December and stocks were pulled down. With increased production this year and larger stocks, the total supply is up sharply. Stocks likely will not be reduced as much this year and could be at levels that would pressure prices lower in early 1986, particularly if production rises as expected. If this is the case, increased 1986 turkey production would likely go to consumption, not building stocks much above this year's level.

Prices To Weaken in 1986

In first-half 1985, prices of 8- to 16-pound commodity-packed hen turkeys in the Eastern region averaged 67 cents per pound, the same as in 1984. Retailers got into the market earlier than last year to build their stocks for the fall and prices in the third quarter were 6 cents above 1984's 72 cents. In spite of increased production, prices of young hen turkeys in fourth-quarter 1985 have remained strong and may average 85 to 89 cents per pound, down slightly from 91 cents last year.

If output increases as expected and stocks of frozen turkeys are up at the start of 1986, prices of turkeys may weaken from this year. Prices of young hens in first-half 1986 may average 59 to 63 cents per pound, down from 67 cents this year. In the second-half, prices may average 62 to 67 cents per pound, off from an expected 81 to 83 cents this year.

World Turkey Production Increases

Output of turkey by major producing countries in 1986 is expected to be up 4 percent from 1985's 2.4 million metric tons. The top four producing

countries are the United States, France, Italy, and United Kingdom. The major turkey exporting countries are the United States, France, Netherlands, and the United Kingdom. If U.S. prices are lower and the dollar weakens, the United States may register a slight increase in exports of turkey and turkey parts. However, the Federal Republic of Germany, our largest customer, has been increasing its own turkey output and its demand for imports is stagnant. So far this year, larger shipments to Egypt, Mexico, and Canada are accounting for the overall gain in turkey exports.

Broilers and Turkeys--A Longer-Run View

The present setting for the poultry industry is one of large supplies and cheap prices of feed ingredients, product prices in excess of production costs, and a rising U.S. economy. After enjoying favorable earnings for more than 2 years, the industry has entered a production expansion phase of 5 percent or so a year.

Consumption of poultry meat has consistently trended upward over the past three decades, despite a number of shocks that have beset the industry. Some of the recent adverse elements include:

... Unstable prices of feed ingredients caused by bad weather and surging crop exports in the early and mid-1970's.

... Inflationary pressures and high interest rates on borrowed capital in the late 1970's and early 1980's.

... A severe economic recession during 1982.

... Sharply lower supplies of feed due to hot, dry weather and the "PIK" program in 1983.

Despite these adverse occurrences, per capita consumption of ready-to-cook young chicken increased at an annual rate of 1.6 pounds or 4 percent during the last decade. In 1985, per capita consumption will total around 55 pounds, up from 53 pounds in 1984. When the 1974-84 trend line is extended to 1995, it will pass through an area of 70-75 pounds. Per capita consumption of turkey also is steadily edging upward. The growth in consumption has been largely attributed to increased demand for further processed boneless items such as roasts, rolls, ground meat, salami, franks, etc. Although turkey often is still associated with holiday occasions, the increase in further-processed items supports the trend toward consumption of more turkey the year round.

The possibility of broiler and turkey consumption continuing on these trend lines raises several points. For example, will total per capita meat consumption also rise or will it hold near levels of the last several years? If the total holds relatively constant, consumption of red meats would have to decline for poultry to stay on this strong upward trend. This would mean major adjustments in both the red meat and poultry industries. The poultry industry would have to invest large amounts of capital to increase production and processing capacity. The red meat industry, on the other hand, would see continued contraction and further unused capacity. While there is a lot of

uncertainty about what course any of these industries will take during the next 10 years, it does raise questions that should be of interest and concern to those involved in the production, processing, and marketing of meats.

Eggs

Weak egg prices put egg producers in a cost-price squeeze during much of 1985. With cuts in production expected in 1986, prices may strengthen.

Production To Decline

Egg production in the first three quarters of 1985 was 8.5 million dozen above 1984's 4,235.5 million dozen. The additional pullets added in response to high egg prices in the first quarter of 1984 were still in the flocks and helped boost output in early 1985. Producers have cut orders for replacement pullets and have sold their least productive hens. Still, egg production was not down much in response to these actions mainly because the rate of lay stayed very high.

In the fourth quarter of 1985, prices have improved and producers are keeping their old hens. Also, orders for replacement pullets have leveled off relative to last year. Egg production during the fourth quarter may be down 1 percent from last year, mainly because the older hens retained will likely have a lower rate of lay than last year.

With replacement pullets still down, egg production may be off 1 percent in first-half 1986 from 1985's 2,836 million dozen. Production during second-half 1986 may also trail 1985 by about 1 percent.

Egg Prices To Strengthen

Prices for cartoned Grade A large eggs in New York were below 1984's level though the first three quarters of 1985. Increased supplies are part of the explanation because the extra eggs are sold to breakers to make egg products. Exports of egg products have been up but with a strong dollar, prices are weak. Another factor may have been a health report late in 1984 to trim egg consumption. Prices have strengthened in fourth-quarter 1985 and may average 73 to 77 cents per dozen, up from 67 cents last year. If producers cut output as expected in 1986, prices may average 68 to 72 cents per dozen, up from 64 to 68 cents in 1985.

World Egg Production

World egg production may be nearly the same in 1986 as the 361 billion produced in 1985. The largest producer is the USSR, followed by the United States, Japan, and Mexico. The largest exporting country is the Netherlands, followed by Belgium-Luxembourg, Yugoslavia, Federal Republic of Germany, and the United States. Germany also is the major importer of eggs, followed by Japan and Hong Kong. U.S. exports of eggs and egg products are expected to be off slightly in 1986 because of the expected smaller supplies and higher prices.

Retail Prices

Retail prices for broilers, turkeys, and eggs will likely follow wholesale prices. The retail price index for poultry is a combination of broiler and turkey prices and as such will likely increase from last year in fourth-quarter 1985. Retail broiler prices will likely remain steady but turkey prices may average above last year. In 1986, the retail price index for poultry may decline. Broiler prices may remain about the same, but turkey prices are expected to decline.

The retail price index for eggs in the fourth quarter is expected to be above last year, reflecting stronger wholesale prices. The index could be up in 1986 from 1985, the result of smaller supplies and higher wholesale prices.

ANOTHER POULTRY PERSPECTIVE

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Summary

There is little doubt but that the poultry industry will be entering a new year of expansion in 1986. The expansion will be launched by favorable returns in 1985, which are supported by a strong demand. Also, support will come from expectations that feed costs will continue low. There is very little other than weather or government action that will add any major strength to feed prices beyond mid-Spring of 1986. We have record supplies of grain, with promises of a near record carryover at the end of the 1985-86 crop year. There is a strong probability that 1986 feed grain production will exceed disappearance. Therefore, excessive supplies will keep pressure on prices through 1986.

The general economy will continue a slow to moderate expansion through most if not all of 1986 and provide support to the demand side. Inflation will stay subdued, thereby holding non-feed costs to small gains, which can be largely offset by increases in productivity.

Poultry will continue to compete in a highly competitive meat arena, an arena that is not showing much increase in size, and where per capita demand for total meat is not increasing. Total red meat and poultry per capita consumption has been fluctuating within a rather narrow range during the past ten years, and real per capita expenditures for total meat has been declining since 1979. Therefore, although the 1986 increase in poultry meat supplies will probably be offset by declines in beef, sharp increases in poultry numbers should be made only with caution flags flying.

Broilers

The current year will show an increase in broiler meat of 4 to 5 percent and mark the tenth consecutive year of increase. During that ten-year period, production increased by two-thirds.

Production will be expanding into early 1986 at around 5 percent over previous year, and the question is, will this rate of increase be sustained. There have been questions raised from a number of sources regarding capacity restrictions, especially in broiler housing. However, in my forty years of experience with the broiler industry, this has never seemed to place a very formidable obstacle in the way of a 3-5 percent expansion. The next point is price, and this has the greatest potential of keeping supply gains on the bottom side of 5 percent. Our calculations would suggest that a 5 percent increase in broiler production will drop prices at least moderately, especially if competing pork supplies increase beyond the first quarter of 1986, which appears likely.

The more difficult forecast of factors inpacting broiler prices may be demand. Demand has been tilting upward since mid-1983, with a proliferation of products at retail and more broiler meat moving into the fast food system. However, I feel that another 5 percent increase in broiler meat will be more difficult to move without some reduction in price.

Turkeys

The turkey industry is continuing its long term upward trend, with an 8 percent or larger gain in total turkey meat. An acceleration of the expansion trend began in the latter half of 1984 and continues into late 1985. Indications are that turkey numbers will establish new highs in 1986, with percentage gains equalling or exceeding those of 1985.

On the demand side, the current situation is highly favorable, and there is no strong evidence to suggest that demand will weaken next year. A proliferation of new products, plus increased turkey meat moving through Delis, has contributed to a strong demand. Real per capita expenditures for turkey has increased for two consecutive years.

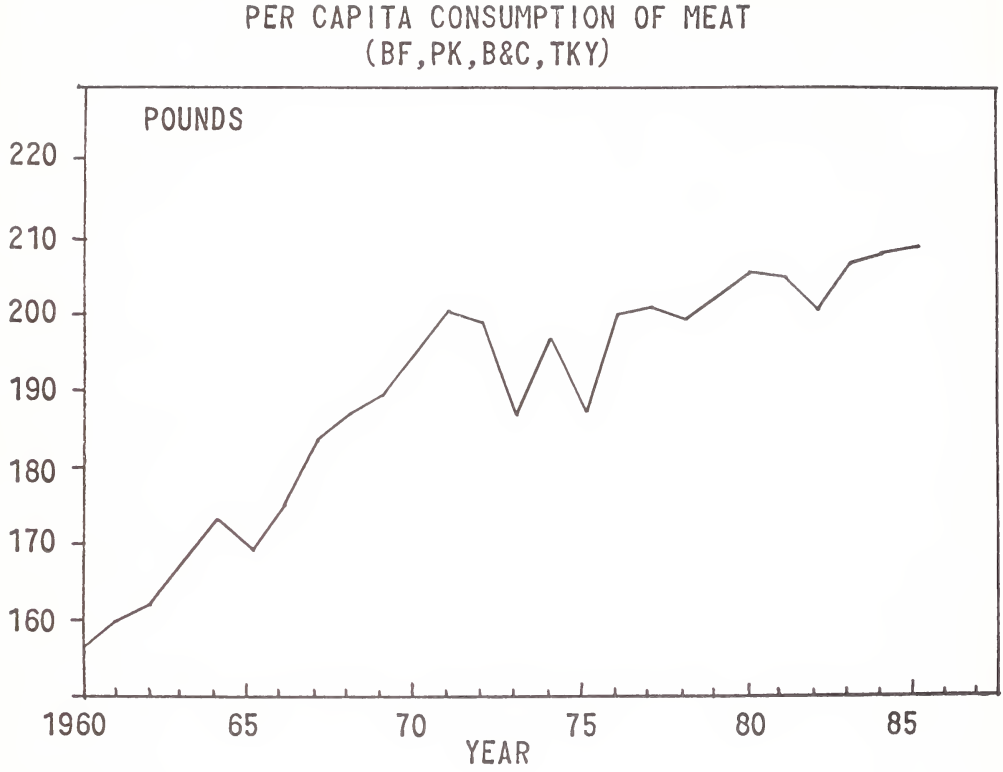
Although demand for turkey meat has been very strong, there should be concern for increasing production at the rate we are now experiencing. Storage stocks will begin 1986 at sharply above the low level of a year earlier. Also, production increases in first half 1986 will very likely exceed consumption and stocks will begin the summer at sharply above previous year levels.

Assuming an 8 percent increase in turkey meat supply, the remaining major price determinant will be demand. If demand can hold stable to higher, then the 1986 price average should fall in the 63-67 cents per pound area for the New York, Hen-Tom, Dressed average. This should hold returns on the plus side. However, if demand falters, then the turkey industry is in for some problems, and we could end the year feeling like we had been run over by a truckload of turkeys. Therefore, a note of caution needs to be sounded at this time.

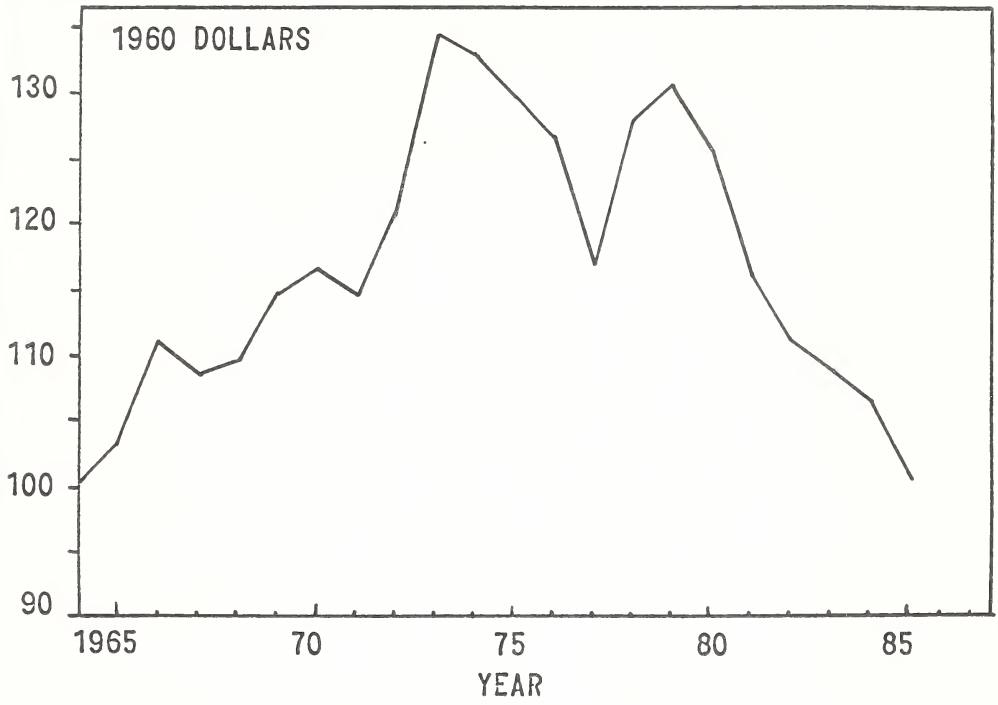
Eggs

The egg industry has continued a downward trend in per capita consumption, resulting from the decline in shell egg consumption. The current decline is coming as a result of the sharpest drop in replacement numbers in 25 years for January-September. However, the reduced number of replacement pullets is being largely offset by an increase in forced molting, which is likely to bring layer numbers to year earlier levels by first quarter 1986. The current increase in the replacement hatch, which is expected to continue at least through first half 1986, will increase layer numbers and egg production.

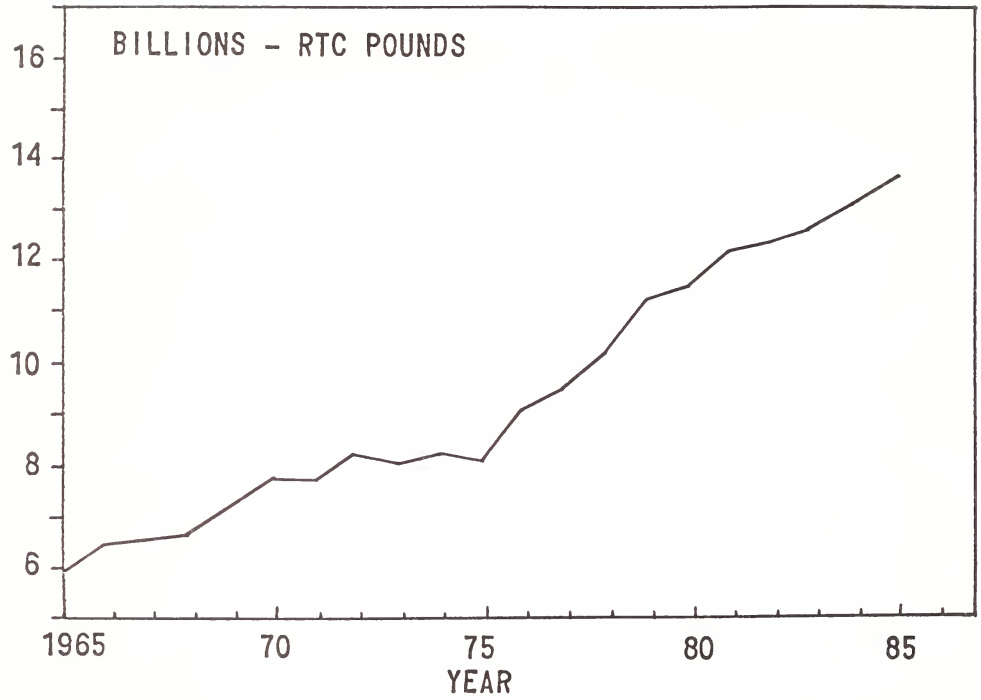
Since real per capita expenditures of eggs continues downward, any increase in production is expected to have a negative impact on price. Although positive returns are expected at least until Easter of 1986, the caution flags are raised for the periods beyond Easter. We are not looking for a real bust in egg prices, but the bloom will be off the industry as supplies increase. Egg returns fluctuate from positive to negative with supply changes, and supply increases in 1986 forward will keep the profit and loss cycle in place.


PER CAPITA CONSUMPTION OF MEAT
(BF,PK,B&C,TKY)
POUNDS
220
210
200
190
180
170
160
1960
65
70
75
80
85
YEAR

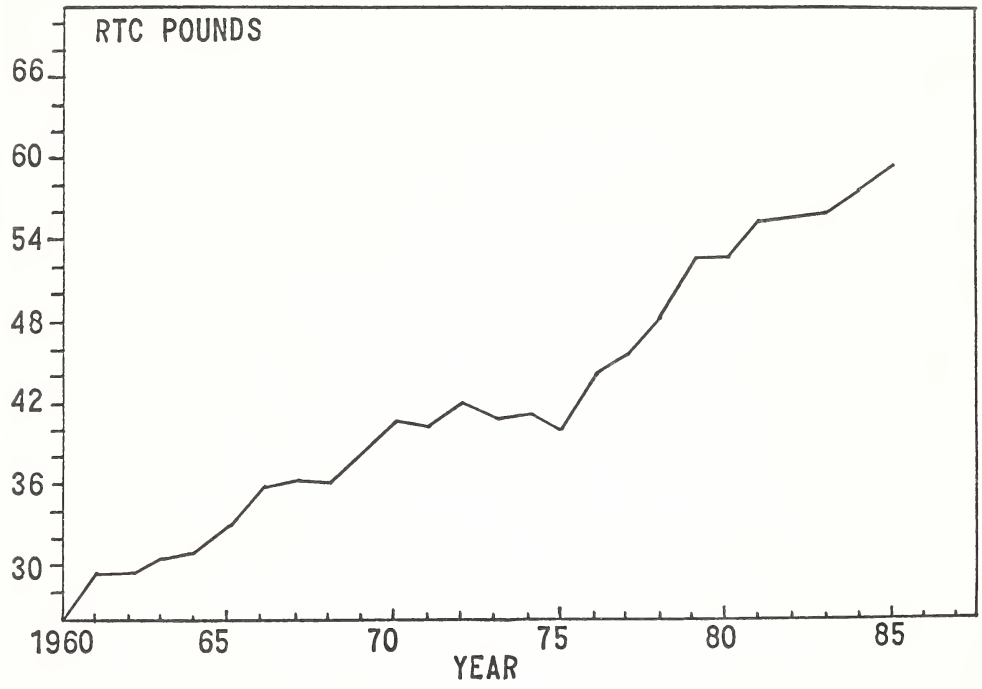
REAL PER CAPITA EXPENDITURES FOR MEAT
(BF,PK,B&C,TKY)



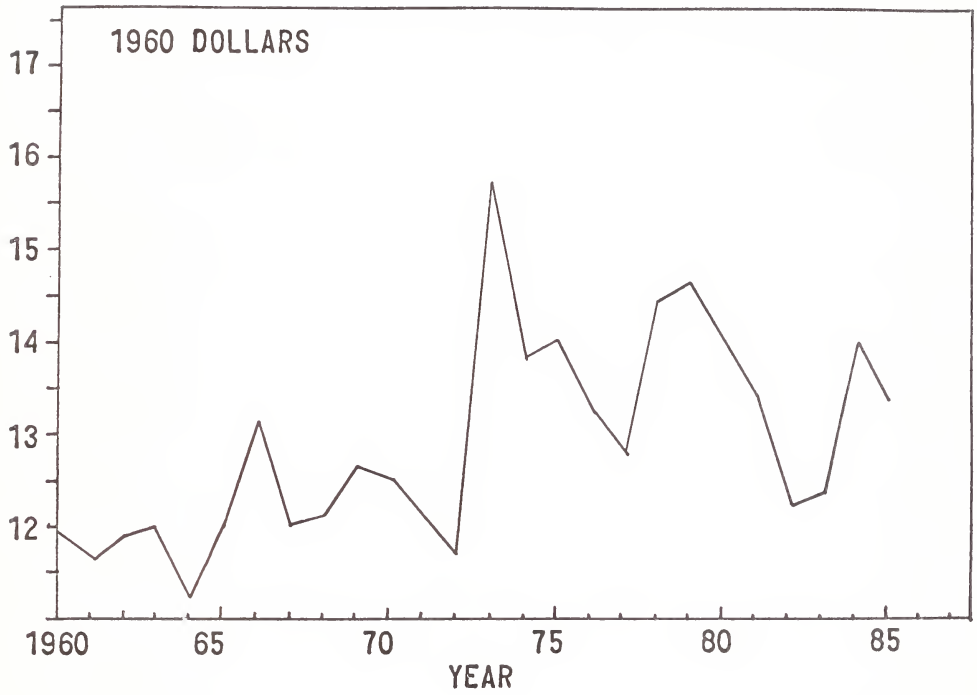
SLAUGHTER OF ALL YOUNG CHICKENS
TOTAL COMMERCIAL



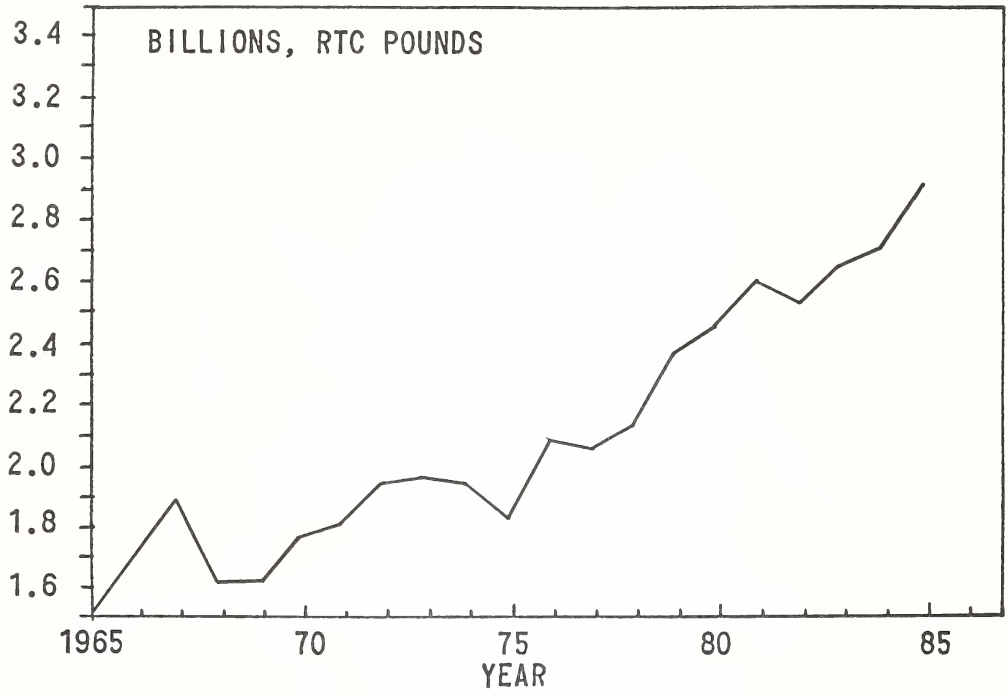
BROILER AND CHICKEN SUPPLY PER CAPITA



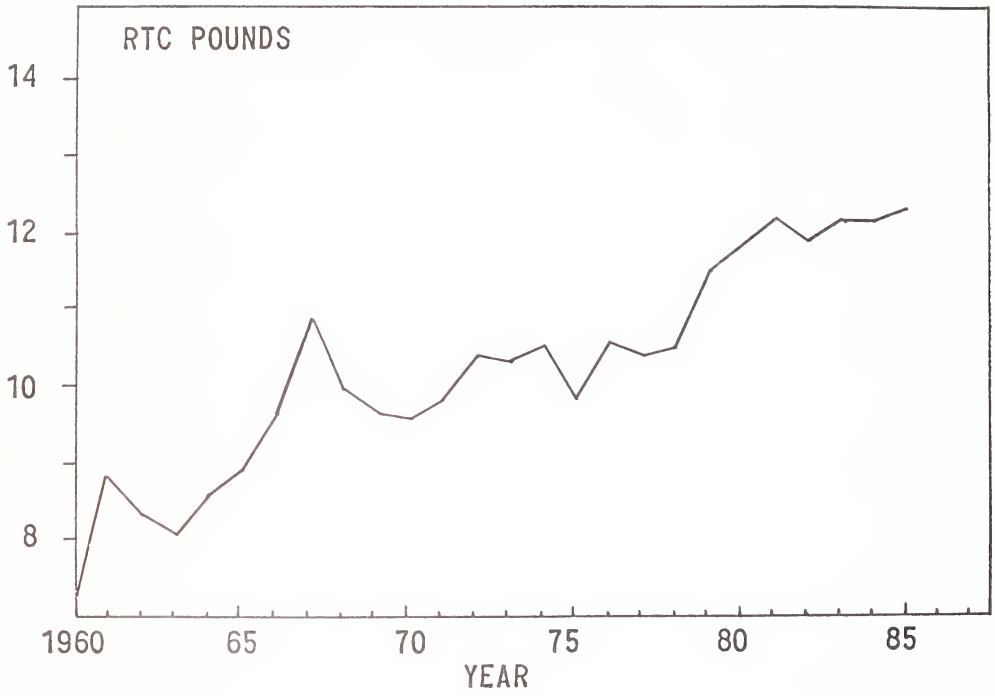
REAL PER CAPITA EXPENDITURES - BROILERS & CHICKENS



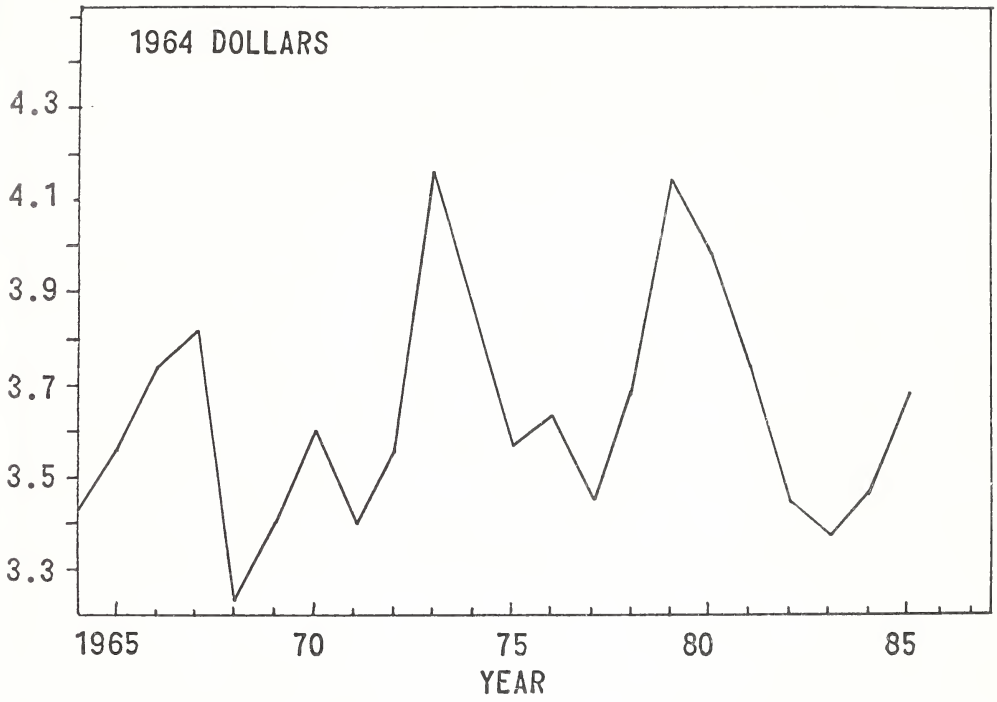
SLAUGHTER OF ALL TURKEYS
(COMMERCIAL)



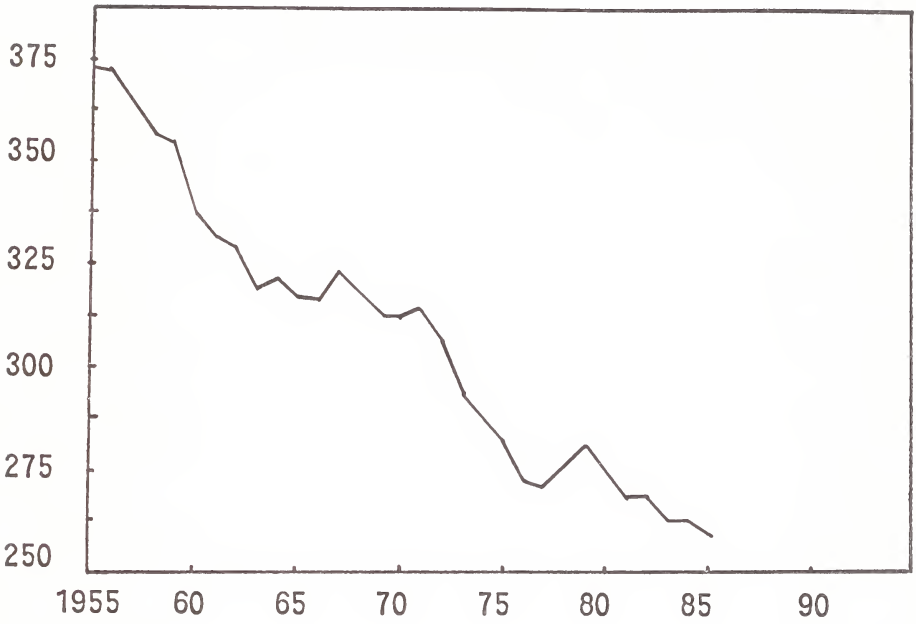
TURKEY SUPPLY PER CAPITA

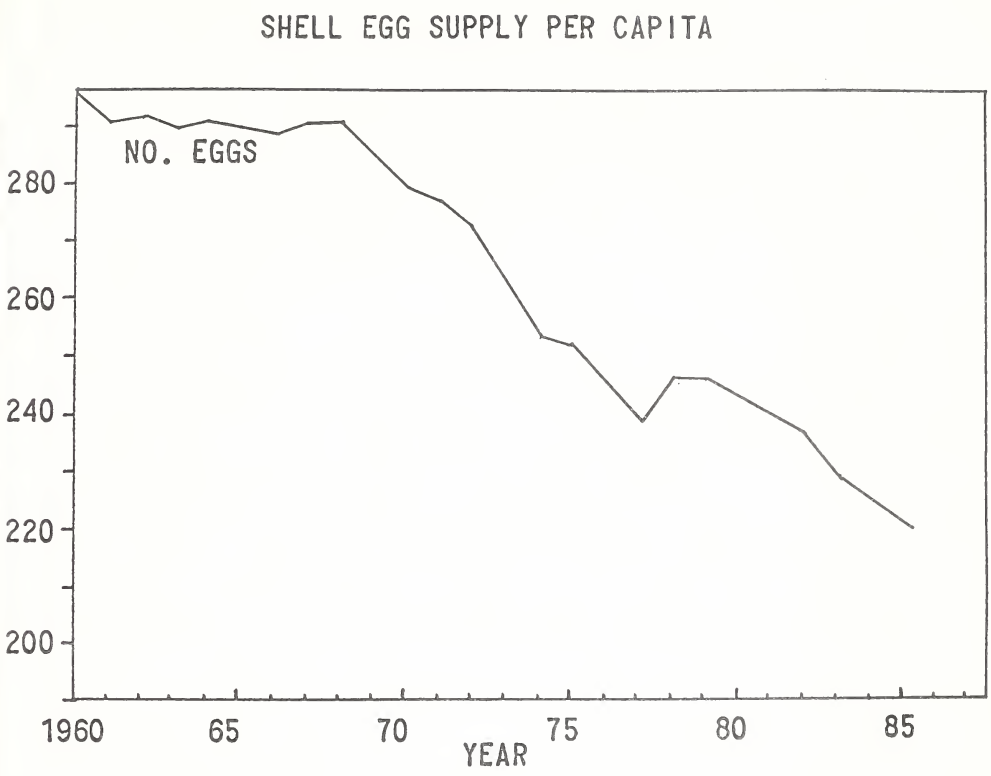


REAL PER CAPITA EXPENDITURES FOR TURKEY

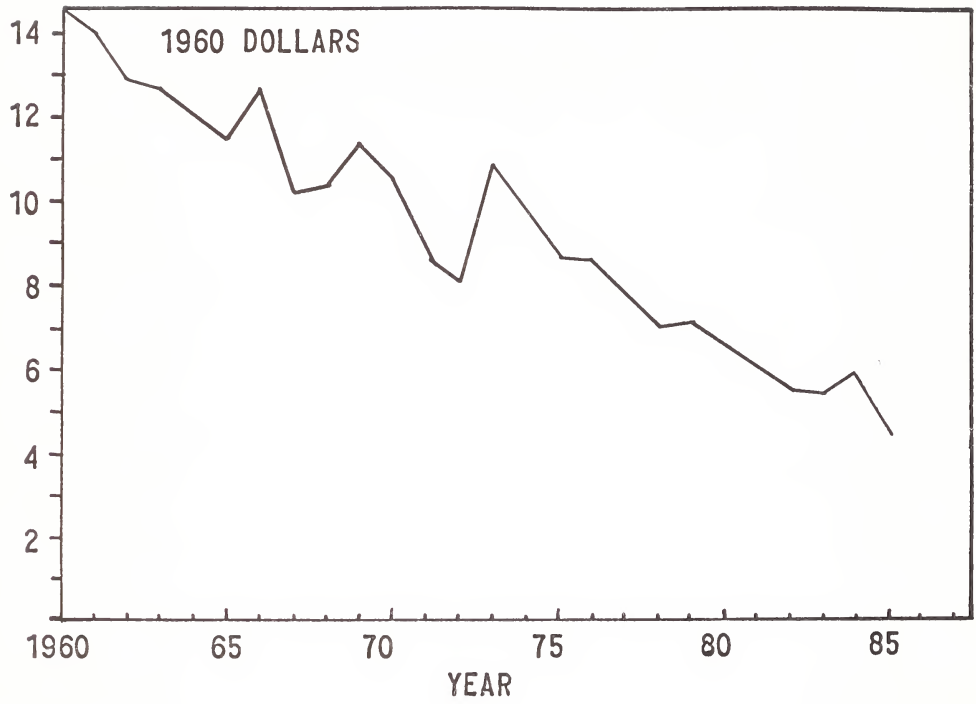


EGGS - PER CAPITA CONSUMPTION - CIVILIAN

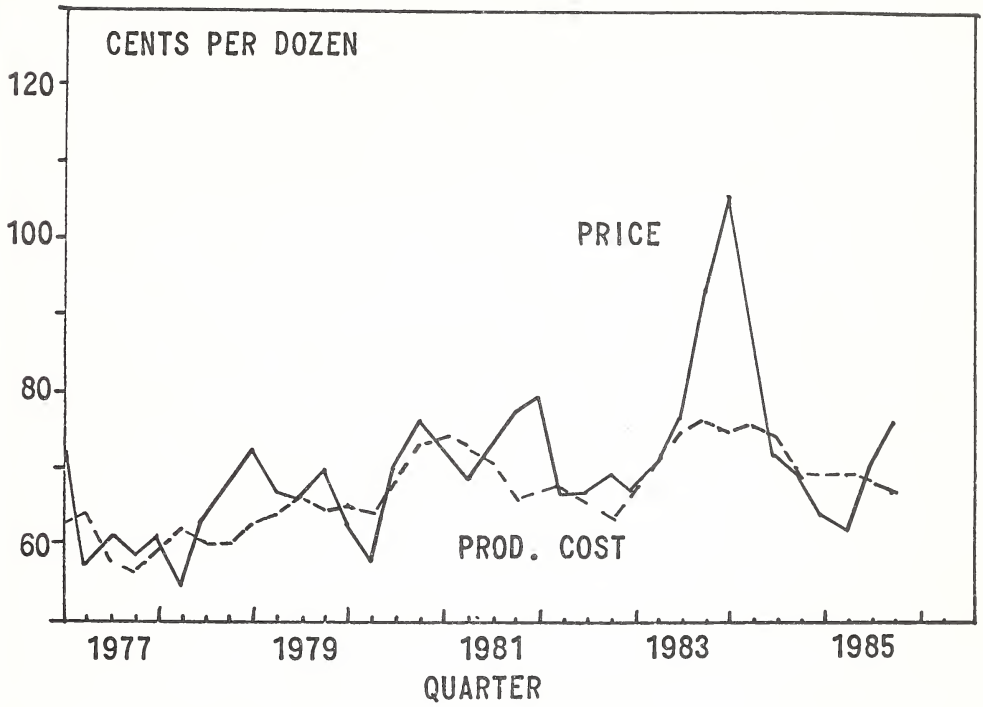



SHELL EGG SUPPLY PER CAPITA
NO. EGGS
280
260
240
220
200
1960
65
70
75
80
85
YEAR

REAL PER CAPITA EXPENDITURES - SHELL EGGS



EGG PRICES VS. PRODUCTION COSTS



Clifford Carman, Agricultural Economist, Economic Research Serv.
William Paddock, Agricultural Economist, Foreign Agricultural Serv.
Charles Shaw, Agricultural Economist, Agricultural Stabilization & Convervation Serv.

Annual Agricultural Outlook Conference
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World Dairy Situation and Outlook

Cow's milk production for the 38 major producing countries is expected to increase only 1 percent in 1985. The U.S. is currently registering a sharp gain in output as dairy farmers respond to favorable feed cost levels and the end of the dairy diversion program last March. Again this year, milk production is up substantially in the Soviet Union, India, and mainland China. Partially offsetting these gains is a further decline in the European Community's (EC) milk output as implementation of the milk delivery quota program continues. The global outlook for 1986 is for milk production to rise another 1 percent. More milk is being forecast for the United States, the Soviet Union, and India, while milk output for the EC and Poland is expected to decline further. Mexico's milk output, which has been declining since 1982, is projected to recover sharply next year.

Butter and Butter Oil

World production of butter and butter oil is estimated at 6.7 million metric tons in 1985, down 1 percent from a year earlier. The outlook for next year is for butter output to remain near 1985 levels. It appears that the EC has reduced butter production 8 percent this year and another cutback of over 2 percent is projected in 1986. Butter production in Poland declined in 1985, and much the same situation is expected next year. New Zealand expanded butter and butter oil output somewhat in 1985, but much of the record milk production was moved into whole milk powder and cheese. Although New Zealand's milk production in 1986 may be near 1985 levels, butter production is expected to decline as New Zealand looks to sell more cheese and whole milk powder on world markets and to reduce stocks of butter. In response to larger milk output in 1985 and more expected for next year, butter production is expanding in the United States, the Soviet Union, and India.

Following sharp increases in world butter stocks in 1983 and 1984, stocks by the end of 1985 are expected to remain near year-earlier levels and may decline slightly by the end of 1986. Reduced butter output for the EC in 1986 is expected to be reflected in some decline in surplus stocks. Butter stocks in the United States dropped sharply in 1984 and 1985 but are likely to accumulate somewhat in 1986 as milk production expands.

International prices for butter and butter oil declined sharply throughout 1984 and into 1985; prices may show little improvement next year. Substantial export sales by the EC, New Zealand, Australia, and others, at competitive price levels, drove down butter prices the past two years. Little change is expected in this situation in 1986.

Cheese

Cheese production worldwide continues to expand; and for 1985, is likely to be nearly 9.6 million metric tons, up more than 3 percent from a year earlier. Another 2 percent gain is projected for next year. Cheese output in the EC rose 2 percent in 1985 despite the downturn in milk supplies, as less milk moved into butter and NDM manufacture. Somewhat the same situation is expected next year as the EC expands cheese output slightly even through milk supplies decline. Cheese production in the U.S. is up around 8 percent this year and another substantial increase is likely in 1986.

World trade of cheese (excluding EC intra-trade) has grown sharply over the past several years; but in 1985, declined a bit as the EC and New Zealand reduced exports. Although cheese prices on international markets have been relatively stable compared to butter and butter oil, they have remained well below 1983 levels. The outlook for 1986 is for cheese exports to expand as some improvement in world demand for cheese is anticipated.

Nonfat Dry Milk (NDM)

World production of NDM is estimated at 4.2 million metric tons this year, down 1 percent from 1984's output. Sharp reductions in output by the EC, Poland, Canada, and Finland were mostly offset by significant increases for the United States, Australia, and the Soviet Union. The outlook for 1986 is for a 1 percent rise in world output as the United States and the Soviet Union expand NDM production. Output is expected to decline in the EC, Canada, and Oceania. World exports of NDM (excluding EC intra-trade) are estimated at nearly 1.3 million metric tons for 1985, a rise of 10 percent from last year's levels. The United States and Australia account for most of the gain in exports. U.S. donations of NDM to the needy abroad are up sharply in 1985 and are expected to continue at high levels in 1986. However, world exports are expected to decline next year. International market prices for NDM have remained quite stable since the fall of 1984 and have ranged between $600 and $700 per metric ton.

Casein

The production of casein in 1985 is now expected to approach the record level of 1983. Significant growth in EC output should more than offset forecasted declines in Polish and Australian production. Ireland, France, and the Netherlands will account for most of the 9 percent boost in Community output.

In particular, Irish production is rising rapidly because dairy processing plants are seeking to expand the range of products manufactured. Exports of casein into world markets will likely be up as much as 15 percent this year. Most of the major exporters are expected to show gains, with New Zealand likely to account for more than two-thirds of the increase. The EC and Poland will share in the remaining one-third. In 1986, world production of casein is forecast to decline 5 percent due primarily to a sharp fall in Polish and Irish output. Both countries anticipate a drop in milk production which will likely result in a decline in industrial use of milk for casein output.

U.S. Dairy Situation and Outlook

Excess dairy supplies were reduced in 1984, as Government purchases were lower; but purchase amounts increased sharply in 1985. Assuming a support price of $11.60 per cwt and no diversion or buyout programs for all of 1986, a continuation of excess dairy supplies is the 1986 outlook.

Surplus removals (net purchases) by the Commodity Credit Corporation (CCC) in 1984 were equivalent to 8.6 billion pounds of milk (fat basis), down by nearly half because of larger commercial disappearance and lower milk marketings (lower production and additional farm use). This year milk production and marketings are expected to be up 5.8 and 6.3 percent, respectively. Commercial disappearance is also expected to be up, but only about 2.2 percent; therefore, USDA net removals are expected to be about 13.5 billion pounds. In 1986, milk production is projected to be up 2 to 5 percent and commercial disappearance is projected to be 1 to 3 percent larger; thus, removals are expected to be 13 to 20 billion pounds (milk equivalent, fat basis).

Did The Dairy Paid-diversion Program Work?

On the one hand, the program certainly contributed to a reduction in the amount of milk marketed, and that was one of the reasons for a sharp drop in surplus removals (purchases) by the CCC in 1984. Another reason for lower purchases in 1984 was because commercial use was large. On the other hand, with the return to more than ample supplies, the program did not provide for a decrease in the amount of excess resources in dairy farming.

While a short-term drop of about one-half in the level of removals is impressive, it does not give a verdict that the paid diversion program worked. The diversion payments were intended to offer short-term relief, allowing farmers time to adjust their production resources to create a closer, longer-term balance between milk supply and demand; that did not occur.

Expansion Continues

Gains in milk production when compared with a year earlier, accelerated from the end of the diversion program through September. During September production was 11 percent above a year earlier. However, the acceleration may have slowed, as production was 10.3 percent larger in October. October's 12.0 billion pounds was a record for the month. The gain in October was the result of 6.9 percent more milk per cow and 3.1 percent more milk cows. The higher yield was likely the result of the much improved milk-feed price relationships and no paid diversion program.

Of 33 States surveyed during October, all posted gains in production from a year earlier. Of the five leading milk production States, New York (ranked 3rd) had the least increase from a year earlier, 6.2 percent. Meanwhile, Wisconsin (1st) and California (2nd) were both about 12 percent above a year earlier, while Minnesota (4th) and Pennsylvania (5th) had gains in total output of 9.9 and 10.7 percent, respectively.

1984 Production Down 3 Percent

Milk production dipped to 135.4 billion pounds in 1984, down 3 percent from the record 139.7 billion in 1983. This was the first decline in annual output since 1978 and the largest drop since 1973. The decrease resulted from the milk diversion program, as well as from lower average milk prices and higher feed costs.

Declines in 1984 production from a year earlier sharpened from 2 percent (daily average basis) in the first quarter to 3 percent in the second quarter and 4 percent in the last 2 quarters. This pattern reflected both the time needed for participants in the diversion program to adjust their production and the cumulative effect of deterioration in milk-feed price relationships.

Milk production in 1985, when compared with 1983, has exhibited the opposite pattern. In the first quarter, production was down 2 percent, but up 1 percent in the second, 5 percent higher in the third and is expected to be up 6 percent this quarter. This pattern of growth from 1983 reflects both the time needed for participants to expand and the effect of improved milk-feed price relationships since mid-1984.

Feed and Forage Prices Lower

In general, the average price paid by farmers for 16-percent protein dairy feed has declined month-to-month since January 1984. The mid-October 1985 price averaged $162 per ton, down $15 from January of this year, and $43 (21 percent) below January of 1984. Compared with a year earlier, the October price was down $17 (9.5 percent).

With milk prices declining proportionally more than feed prices from January to June of this year, the milk-feed price ratio declined from 1.58 in January to 1.44 in June. However, the ratio remained unchanged in July and improved from August through October. Compared with a year earlier, the dairy farmer during October was able to buy 2 pounds (1 percent) less concentrate for each cwt of milk sold. However, if adjusted for the 50-cent-per-cwt deduction in effect last year, the milk-feed price ratio was 1.54, 2 percent above October 1984. Thus, it appears likely that the ratio was still favorable to continued relatively heavy rates of concentrate feeding. The feeding rate for grain and other concentrates on July 1 averaged 15.8 pounds per cow, up 6 percent from a year earlier. The milk-feed price ratio is expected to remain conducive to heavy concentrate feeding through at least late summer 1986.

May 1 stocks of hay were reported at 26.9 million short tons, one-third more than a year earlier. Indicated area harvested in 1985 is almost 62 million acres, with a yield of 2.45 tons per acre, production is forecast at 151.2 million tons. Use is expected to be about 140 million tons (down 3 percent) because of fewer roughage consuming animal units in 1985/86. With larger supplies and weaker use, the season average price this year is expected to be $5 to $10 per ton below the May 1983 to April 1984 average of $73.80.

July Cow Inventory
and Replacements Larger

Milk cows on farms on July 1, 1985 numbered 11.050 million head, an increase of 250,000 (2.3 percent) from a year earlier. Dairy heifers (500 pounds and over) held for herd replacements were 5 million, an increase of 50,000 (1 percent) from July 1, 1984. With more of a gain in cows than in replacements, the number of heifers per 100 cows on July 1, 1985 was 45.2, down from 45.8 a year earlier; still the second largest ratio of heifers to milk cows on record.

A record rate of culling during 1984 offset the large number of replacements available on January 1, 1984 to calve and enter the herd; hence, the 290,000-head decline in the milk cow inventory last year. Federally inspected (FI) dairy cow slaughter in 1984 was about 3.2 million head, implying 341,000 more dairy cows went to slaughter in 1984 compared with 1983.

However, not all of the additional dairy cow slaughter was the result of the diversion program. In fact it seems likely that a third to a half of the extra kills last year would have occurred without the diversion program. Total FI cow slaughter in 1984 was 8.2 million head, implying that 5 million were beef cows. The total FI cow kill last year was nearly 1 million more than 1983. Thus, the additional dairy cows accounted for about 34 percent of the extra kills in 1984.

Federally inspected cow slaughter through November 9, 1985 (45 weeks) totaled 5.9 million head, a decline of 15.9 percent from the same period in 1984. Dairy cow slaughter was 2.4 million head, down by 16.2 percent, while beef cow slaughter was 3.6 million, down 15.7 percent. If the FI dairy cow kill for the last 7 weeks of 1985 is about 400,000 head, the total kill for this year will be about 0.4 million less than 1984. When compared with 1983, about 100,000 fewer dairy cows will have gone to slaughter this year.

Based upon the FI dairy cow slaughter and the January and July inventory of replacements, the number of heifers entering the milking herd slipped below a year earlier during late summer 1985, following sizable increases earlier in the year. Entering heifers totaled about 15 percent more than a year earlier during March-May as the diversion program ended. A small gain of 4 percent was posted during June-July, but entries were down about 3 percent during August-September when compared with a year earlier.

Evaluation of this entry data is difficult because it has only been available since January 1984 (when data on dairy cow slaughter was first published). However, the size of the March-May increase implies that some producers delayed breeding of older heifers and accelerated breeding of younger heifers in anticipation of peak demand for replacements at the end of the diversion program. This fall entries may be running slightly below a year ago because of temporarily tighter supplies of older heifers.

Sizable numbers of milk producers are under financial stress. 2/ As of January 1, 1985, 21 percent of dairy farms were highly leveraged (40-70

2/ Data are from Financial Characteristics of U.S. Farms, January 1985. AIB No. 495, USDA, Economic Research Service, July 1985.

percent debt/asset ratio) and 11 percent were very highly leveraged or technically insolvent (a ratio greater than 70 percent). The share of dairy farmers with financial difficulties was high relative to other types of farms and growing more rapidly. In addition, about half of dairy farms in 1984 did not generate enough cash from all sources to meet debt repayment and modest family living expenses.

Financial pressures are not likely to be translated into supply response very quickly. One major factor is the lack of attractive alternatives. Most agricultural commodities have problems of their own. While the nonfarm economy has been generating new jobs fairly robustly, these new jobs are not the Northern manufacturing jobs that have typically absorbed many exiting dairy farmers.

The other major factor is that the situation has not steadily deteriorated. The first major pinch came in late 1983 when the effective milk price was lowered and feed prices rose sharply. However, the pressure abated during the second half of 1984 when feed prices fell and milk prices increased. The decline in effective returns over concentrate costs (from the 1982 record) during autumn 1984-spring 1985 was only half as severe as a year earlier. Since the July 1, 1985 reduction in the support price the returns over concentrate costs have been similar to late 1983-early 1984. The financial condition of dairy farms in the major Midwestern and Northeastern dairy areas have also been eased by good yields and large local supplies of corn and hay in both 1984 and 1985.

Production Will Be Larger

With low feed prices, the number of milk cows on farms has increased since the end of the diversion program. In fact the number of dairy cows in September and October was above 1983 and the largest since May 1985. However, additional gains in the cow herd are expected to be limited because of tight cash flow, lower milk prices, and some tightness in the heifer supply. For 1985, the average number of cows is likely to be 1.6 percent above last year.

Total milk production per cow this year is anticipated to be 13,000 pounds, 4 percent above 1984 and 3.3 percent above 1983. Milk per cow was above 1983 in January and expanded sharply with the end of the diversion program.

For all of calendar 1985, milk production is estimated at a record 143.2 billion pounds, 5.8 percent greater than in 1984. Calendar 1986's production is projected to be 2 to 5 percent larger than 1985. Better management, new technologies, and genetic advancement will add upward pressure on yields, but, little change in the average cow herd seems likely next year.

Farm Milk Prices To Decline

Prices received by farmers for all milk during 1984 averaged $13.45 per cwt, 12 cents below a year earlier. The effective all-milk price (adjusted for differences in deductions) was $12.95 per cwt, down 20 cents. Milk prices received by farmers in October were $12.50 per cwt, $1.50 (10.7 percent) below

a year earlier. Prices are expected to remain below a year earlier through mid-1986 because of surplus supplies and the lower support price.

Prices last year increased $1.40 per cwt from June through November. However, this year the increase may be in the range of 50 to 70 cents. With more than ample supplies, little strength relative to the support price is expected. Thus, with a support price of $11.60 per cwt on October 1, milk prices during this fall and winter may be $1.50 to $1.70 per cwt below a year earlier.

In 1985, the all-milk price may average $12.75 per cwt, 70 cents lower than 1984. The effective price for 1985 would be 32 cents lower than last year at $12.63 per cwt. In 1986, the all-milk price may be $12.15 to $12.65 per cwt, 10 to 60 cents lower than 1985.

Cash Receipts Lower
in 1984, but Up in 1985

Cash receipts during 1984 were $17.9 billion, down 4.4 percent from 1983. Farm marketings of milk and cream to plants and dealers and direct sales to consumers declined 3.6 percent in 1984, while the average return per cwt marketed was down about 0.9 percent. In 1985, with marketings up 6.3 percent and prices down 5.2 percent cash receipts are expected to total $18.1 billion, up less than 1 percent.

However, 1983, 1984, and 1985 cash receipts were impacted directly by provisions of the price-support program. After making adjustments to cash receipts for diversion payments and net deductions, the total effective receipts were about $18.1 billion in 1983 and about $17.8 billion in 1984 and will likely be $18.3 billion in 1985, compared with $18.2 billion in 1982. If the 1986 marketings and price projections are right, receipts in 1986 would total $18.2 billion.

Support Reduced;
Wholesale Prices Lower

Under provisions of the Dairy and Tobacco Adjustment Act of 1983, USDA reduced the support price of manufacturing grade milk to $12.10 per cwt for milk of average fat test ($11.81 for milk testing 3.5 percent fat) on April 1, 1985. Also under provisions of the Dairy and Tobacco Adjustment Act of 1983, USDA reduced the support price to $11.60 per cwt for milk of average fat test ($11.31 for milk testing 3.5 percent fat) on July 1, 1985. With no change in the manufacturing allowances used in the calculations, both 50-cent-per-cwt reductions in the support level were reflected in reduced purchase prices.

During times of significant price support purchases, the CCC purchase prices for butter, cheddar cheese, and nonfat dry milk tend to become the floor for the wholesale market prices. Reflecting the lower purchase prices, the wholesale spot prices for butter, cheese, and nonfat dry milk have been lower this summer. With more than ample supplies and the level of support held at $11.60 per cwt; little, if any, upward price pressure is expected on the wholesale spot prices until next summer.

Cheddar cheese (Wisconsin assembly points, 40-pound blocks) during October averaged 124.31 cents per pound, 12 cents below January and 19.5 cents below a year earlier. Likewise, the wholesale price of nonfat dry milk (high heat, Central States area), at 80.62 cents a pound during October, was down 10.4 cents from January and 10.1 cents below October 1984. Meanwhile, the price of butter (Grade AA, Chicago) during August averaged 143.0 cents per pound, up 0.75 cents since January, but 15.75 cents below a year earlier.

The Bureau of Labor Statistics (BLS) wholesale price index for all dairy products during October was 245.5 (1967=100), down 4.3 percent from a year earlier. The BLS wholesale dairy index is expected to remain near current levels through early summer 1986. The index for January-October averaged 0.3 percent below a year earlier, but for all of 1985 is likely to average 1 percent lower than last year. In 1986, the index is expected to average unchanged to 2 percent lower.

Retail Dairy Prices Up Less Than All Food

The BLS retail dairy index in October was 0.4 percent above a year earlier, and the smallest year-over-year increase thus far this year. In 1985, the BLS retail price index for all food items is expected to average about 2 percent higher than 1984's 302.9 (1967=100). The dairy price index this year is also expected to average 2 percent larger than last year. In 1984, the dairy index averaged 253.2 (1967=100).

Prices of dairy products at retail have not yet fully reflected declines at the wholesale level. Retail margins have widened significantly this year, after a number of years of modest increases. Part of the widening can be attributed to sluggishness in retail prices, the same phenomenon that held down price gains at retail during second-half 1984.

In 1984, retail prices for a half-gallon of Grade A vitamin fortified whole milk averaged 112.7 cents, down slightly from the average price in 1983 and only a penny higher than in 1981. In contrast, retail prices for a half-gallon of whole milk increased 8.5 cents a year during 1978-81. Although small, the drop from 1983 to 1984 was the first year-to-year decline in almost 2 decades. During the first 10 months of 1985 the retail price has averaged $1.137 per half-gallon, up 1.3 cents (1.2 percent) from a year earlier.

The 1984 farm value of a half-gallon of milk was 58.2 cents, down 1.3 cents from 1983. This decline resulted from the December 1983 reduction in the support price of milk. The lower farm value pushed the farmer's share of the consumer's milk dollar below 52 cents, down a penny from 1983 and a nickel below the 1976 peak. In 1985 with lower farm values and higher retail prices the farmer's share of the consumer's milk dollar has declined.

Manufactured Output Reduced

Production of manufactured dairy products on a milkfat basis in 1984 was equivalent to about 78.5 billion pounds of milk, down 5.5 billion (6.5 percent). The decrease resulted in part from additional fluid sales but primarily from reduced farm marketings of raw milk. The decrease in raw milk

use in the manufactured products sector resulted in less butter and nonfat dry milk and American-type cheese production. Butter output in 1984 declined 13.8 percent and used 3.7 billion pounds less milk. Likewise, American-type cheese production in 1984 was down 7.9 percent and used 2.4 billion pounds less milk than a year earlier. The reduced sum of milk used to make butter and American-type cheese is greater than the total reduction in raw milk used in manufacturing because of the 700-million-pound increased use of milk to make other than American-type cheese.

During January-September of this year the amount of raw milk used in manufacturing when compared with 1984 has increased about 4.6 billion pounds, not completely reflecting the 4.8 billion pound increase in milk marketings. When compared with 1983, total manufacturing use is down 600 million pounds. Looking at butter and American cheese, they absorbed 3.8 billion pounds more raw milk in January-September of this year when compared with 1984, but milk used to produce these products in 1985 is down 2.1 billion from 1983.

Commercial Use Higher

Sales of dairy products surged during July-September. Preliminary data for third-quarter 1985 indicate commercial disappearance of all milk and dairy products on a milkfat basis was 4.7 percent above July-September 1984. First-quarter 1985, after adjustment for leap year was up 1.8 percent from 1984, while the second-quarter was about unchanged from a year earlier. Sales for all of 1984 were up 3.5 percent from 1983; and for 1985 commercial sales are expected to be 2.2 percent higher than 1984. The 1983 to 1985 gains would be the largest in 3 decades. Sales of milk and dairy products are projected to be 1 to 3 percent larger in 1986 than in 1985 because of lower real prices, a larger population, higher per capita real incomes, and additional dairy product promotion.

A comparison of commercial disappearance of major dairy products during 1984 with a year earlier indicates that butter was up 2.3 percent; American-type cheese, 10.5 percent; cheese other than American, 8.3 percent; fluid products, 0.8 percent; frozen dairy products, 0.5 percent; and nonfat dry milk, 7.8 percent. Meanwhile, canned milk sales in 1984 were again lower, down 6.2 percent.

For the first nine months of 1985, preliminary data indicates American-type cheese, canned milk, and nonfat dry milk sales were down 1 percent, 7.5 percent, and 14 percent, respectively, from 1984. Sales of cheese other than American were up 5 percent, fluid products were about 1.5 percent higher,while butter was up 0.7 percent.

USDA Stocks Lower

Stocks held by USDA on October 1 were equivalent to 10.3 billion pounds of milk (milkfat basis), down 5.3 billion (34 percent) from a year earlier. Holdings by the Government fell sharply from June 1, 1984 to June 1, 1985, due to the reduced amount of purchases relative to the amount of program uses. With lower program uses and an increase in removals, USDA stocks have been about unchanged since late spring. By next winter, Government inventories will likely be growing rapidly because of huge price support purchases.

USDA holdings of cold-storage butter on October 1 were 211 million pounds, a decline of 176 million (46 percent) from a year earlier. Meanwhile, American cheese stocks (including processed American) held by USDA in cold storage were 597.1 million pounds, a drop of 170.7 million (22 percent).

Stocks held by the trade on October 1 were equal to about 5.2 billion pounds of milk (milkfat basis), a drop of 200 million from 1 year earlier. The trade held 36.5 million pounds of butter, about 3 million less than last year. They had reduced their total stocks of cheese by about 9 million pounds from October 1, 1984. This low level of stocks is expected for the rest of 1985. There is little reason for the trade to hold more than working stocks because of more than ample supplies of raw milk, ample Government-held products, and no expected price advancement until mid-1986.

CCC Purchases More than a Year Earlier

USDA net removals (delivery basis) under the milk price-support program were equivalent to 8.6 billion pounds of milk (milkfat basis) in calendar 1984, down by nearly half from 1983. Removals were lower because of reduced marketings (lower production and additional farm use) and increased commercial disappearance. However, since February 1985, USDA net removals under the program have increased sharply. From March through October, removals each month have been more than a year earlier. Total purchases for January-October 1985 were equal to 11.7 billion pounds of milk (milkfat basis), compared with 8.2 billion over the same period in 1984. For all of 1985, removals are expected to total about 13.5 billion pounds and are projected to be 13 to 20 billion in 1986.

Dairy Support Costs Lower

There are a number of ways to compute the cost of the dairy price support program. One method is to look at the taxpayer's cost. With this method, you sum the cost of net purchases for a marketing year, reduce the total for any deductions, and then add on diversion payments. Under this method the costs in 1982/83 (October through September) were about $2.5 billion, up 16 percent from a year earlier. In 1983/84 costs dropped sharply to about $1.5 billion but are estimated to be about $2.2 billion in 1984/85, and are likely to again reach $2.5 billion in 1985/86.

Summary

With no change in the dairy price support program, no diversion or buy-out programs, and a support price of $11.60 per cwt for all of calendar 1986, substantial supplies are expected. Milk production in calendar 1986 will likely be 148 billion pounds, up 3.3 percent from 1985. Meanwhile, commercial use will also be up, likely reaching nearly 132 billion pounds, but less than supply. Thus, CCC purchases (net removals) of the excess will increase to 16.4 billion pounds milk equivent, nearly reaching the record 16.8 billion of calendar 1983.

DEALING WITH COMMODITY SUPPLY-DEMAND IMBALANCES

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Keith J. Collins, Deputy Division Director
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OUTLOOK '86

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The 1985 Farm Bill, like its predecessors, is being formulated partly on the basis of current and prospective economic conditions in agriculture. However, unlike the 1977 and 1981 bills, the 1985 legislation is being written under the perception that U.S. and world agriculture has now and will continue to have production capacity well in excess of demand.

In 1981, the main concern was whether we would be able to produce enough to feed a hungry world. After all, unprecedented growth in world grain and oilseed consumption and trade had occurred during the 1970's, and the United States was believed to be the country with the greatest potential to expand production.

Another major concern in 1981 was related to inflation and rising farm production costs. So, the 1981 farm bill was developed under optimistic expectations for world trade and pessimism over controlling inflation. In that environment, the levels of price and income support established for 1982-85 crops did not appear high.

Current conditions and prospects

Today, the economic situation in agriculture is nearly the reverse of four years ago. Inflation has been brought under control, production costs have risen far less than expected, and commodity prices are sharply below earlier projections. Expectations for world grain use and trade are as pessimistic today as they were optimistic back then.

Based on current forecasts, 1985/86 will be the sixth consecutive season in which combined world wheat and coarse grain consumption will be less than levels indicated by the 1960-79 trend. However, during those same six seasons, world production will have been above the trend level three times; twice it was 98 to 99 percent of trend: only once--1983, the year of PIK and drought in the United States--was it significantly below trend.1/

1/ Data used to estimate trends and current data are found in: U.S. Department of Agriculture, Foreign Agricultural Service, Foreign Agricultural Circular, Grains, FG-14-85, November, 1985.

The reasons behind these divergent trends in the 1980's have been well documented. A partial list includes such factors as a worldwide economic recession, high real interest rates and a strong U.S. dollar, debt problems of developing countries, maintenance of production incentives in exporting countries, a move toward self-sufficiency by some importing countries, and generally good weather conditions.

Marketing year	Consumption		Production	
	Trend	Actual	Trend	Actual
		- - MMT - -		
1980	1,194	1,189	1,198	1,176
1981	1,221	1,181	1,225	1,218
1982	1,249	1,221	1,254	1,258
1983	1,276	1,244	1,281	1,176
1984	1,303	1,278	1,309	1,322
1985	1,331	1,286	1,337	1,350

World stocks of wheat and coarse grains at the end of 1985/86 could be more than 21 percent of marketing year use, the highest ratio since the late 1960's. The United States, the only exporting nation attempting to cut production, is expected to be holding 55 percent of world stocks, while accounting for about a fourth of world production. During the last half of the 1970's, the United States on average held 35 to 40 percent of the world's wheat and coarse grain stocks and, as today, accounted for about a fourth of world production.

During 1980/81-1985/86, world wheat and coarse grain trade has been above the 1960-79 trend every year, except the forecast for 1985/86. However, exports during the last four seasons, including 1985/86, have been below the levels indicated by the 1970-79 trend; and, trade has generally trended downward since 1980/81. The export gains realized during 1970-79 fostered the optimism prevailing at the time the 1981 Farm Bill was being developed.

Marketing Year	World Trade	
	1970-79 Trend	Actual
	- - MMT - -	
1980	187	202
1981	196	198
1982	204	189
1983	213	195
1984	222	209
1985	231	183

During the 1960's, combined world wheat and coarse grain trade grew slightly over 2 million tons per year; during the 1970's, the average gain was 8.7 million tons per year. Moreover, during the sixties, trade expanded 8 million tons per every 100-million-ton increase in world consumption. However, during the 1970's, the entry of Central Plan countries, especially the Soviet Union, in international grain markets along with sharp increases in imports by developing countries led to a 32-million-ton gain in trade for each 100-million ton rise in world consumption.

So far in the 1980's, world trade is expanding only 4 million tons for a 100-million-ton increase in world wheat and coarse grain consumption. Most of the annual variation in trade during the 1980's has been due to changes in Soviet grain production (60 percent of the annual variation in world wheat and coarse grain trade during 1970/71-1984/85 was accounted for by the USSR); imports by other countries or regions have been about flat or have declined. A growing self-sufficiency in formerly importing countries, such as China and India, has also dampened trade. Finally, many importers have not experienced the fall in prices seen in the United States because of the appreciation of the U.S. dollar since 1980.

The current low ratio of trade gains to consumption gains has to be a troublesome question for exporters. Based on the long run trend, it takes almost four years to achieve a 100-million-ton gain in combined wheat and coarse grain consumption. If the ratio of the change-in-trade to change-in-use is only 0.04 as it was during 1980-84, trend gains in consumption imply trade increases of barely over 1 million tons per year. Would a farm bill which produced lower loan rates, along with help from a weaker U.S. dollar, significantly raise this ratio? Or, would the major effect of such changes be on the U.S. share of trade?

To summarize, the current crop surplus is a result of many interacting factors. A number of these could reverse themselves in coming years, such as income growth, foreign debt, the value of the U.S. dollar, weather, and so forth. Others, such as excess capacity based on U.S. and foreign productivity gains likely will not. It seems that the long run trend of declining real grain prices will continue, and export markets will remain highly competitive. As world grain consumption rebounds, the gains in trade are not likely to approach the gains of the 1970's. Thus, the battle for market share will be intense.

Wheat--A Case Study of Policy Response to Surpluses

The wheat market provides a good example of how Governments, especially the United States, have attempted to deal with surpluses. The U.S. efforts have largely failed: world wheat stocks have increased each year since 1980/81, while production increased in all years except 1985/86.

The major wheat exporters--United States, Canada, Australia, Argentina and the EC--acting independently have managed to maintain their production surplus (production less domestic use) while the rest-of-the-world (ROW) has shrunk

its production deficit (domestic use less production). Since imports generally follow changes in the ROW production deficit, exporters have engaged in a price war or increased subisidies in an attempt to maintain market share. The United States, because of its price support and acreage reduction programs and an appreciating currency, has been the big loser in the trade war.

Excess wheat production has also spilled over into the coarse grain market. Prior to 1980/81, coarse grains accounted for most of the increase in grain used for feed. However, during 1980/81-1984/85, wheat accounted for about 80 percent of the growth in world feed use of grains. Thus, low-priced wheat has replaced some coarse grain in international trade.

Marketing Year	Exporters production surplus	ROW production deficit
	- - MMT - -	
1975-79	68	67
1980	80	83
1981	100	93
1982	102	91
1983	93	91
1984	102	88
1985	88	75

Breaking down the exporters' production surplus between the United States and its competitors reveals the following:

Marketing Year	Area harvested		Production surplus	
	U.S.	Competitors	U.S.	Competitors
	- mil. hect. -		- MMT -	
1975-79	26.4	36.9	33	32
1980	28.8	40.0	44	37
1981	32.6	42.8	53	48
1982	31.5	44.4	51	52
1983	24.8	46.7	36	57
1984	27.1	44.7	39	63
1985	26.1	44.6	36	52

The production surplus in the United States relative to that of the competitors took a radical turn in 1983/84. That year, the PIK program contributed to a sharp cut in U.S. area harvested while competitors increased harvested area. Most of the increase in competitors' production surplus in 1984/85 came from higher yields; the forecast drop in 1985/86, from lower yields.

The U.S. loan program, both the regular and farmer-owned reserve (FOR), has been a factor in the world wheat market. Market prices have been far below levels needed to make redemption of grain from the FOR profitable. So, as those loans mature, the grain is forfeited to the Commodity Credit

Corporation (CCC). Many regular loans taken out on the 1985 crop are also likely to be forfeited. Wheat in the FOR or owned by the CCC is isloated from the market at current prices (and at prices much stronger than the current market). The effect is to reduce the U.S.'s exportable supplies as the following data indicate. The exportable supply is defined as the production surplus plus beginning stocks. After deducting stocks in FOR and CCC, the U.S. exportable supply for 1985/86 of 42 million tons is only half the exportable supply of our competitors.

Marketing Year	Exportable supply	
	Competitors	U.S.
	- MMT -	
1975-79	55	56 (49)
1980	60	68 (53)
1981	67	80 (59)
1982	75	82 (48)
1983	82	77 (55)
1984	89	77 (49)
1985	84	74 (42)

The numbers in parenthesis show the extent to which the exportable supply in the United States has been reduced by its storage policies. U.S. wheat market share peaked in 1981/82, the same year that its exportable supply peaked, and has since steadily fallen. As our market share has fallen, market prices have also fallen, leading to additional efforts to cut production and a growing quantity of grain being isolated from the market. This, in turn, reinforces the trend toward a smaller share of trade

Summary

The United States has used acreage reductions and loan programs to cut production and raise market prices and has maintained target prices to protect farm income. However, these programs have encouraged production elsewhere and, with help from an appreciating dollar, have contributed to a loss of export share. Other exporting countries have generally been more insistent on protecting market share, and their trade and stockholding policies reflect this. The results are, compared to several years ago, the United States has a smaller share of world wheat production and exports, but holds a larger share of world stocks. And, deflated per acre returns, including Government payments, to U.S. wheat growers in 1985/86 will be only 85 percent of the average for 1979/80-80/81.

Options for Dealing with Crop Surpluses

The options available for alleviating current surpluses range from doing nothing to global grain policies that specify programs for major grain importers and exporters. A cartel would be an example of a global production

adjustment program. Concensus economic and political philosophies preclude some of the options within this range. Doing nothing or joining with other countries to design a global grains policy are not practical alternatives. At this point in the policy debate, the choice will be to alter price and income support and production adjustment policies. At the same time, these revisions must be chosen with knowledge that they may cause foreign nations to alter their roles in global grain markets.

The variety of choices for U.S. policy can be grouped into three categories, depending on how the policy directly affects market price and quantity produced. Choices include policies that 1) do not affect price or quantity, 2) fix price and then fix quantity accordingly and 3) fix quantity and let price adjust. Note that one combination has been omitted: fixing price and letting quantity adjust. This latter combination is not a resolution of the problem of surplus. By and large, it is this choice which has contributed to our current problem. Price was fixed by the loan rate and quantity essentially was left to adjust to a price which exceeded market clearing levels; the result was increasing surpluses. The leading Farm Bill proposals that have been before the Congress in recent months and which offer alternatives for reducing surpluses can be grouped by the three policy-choice categories.

Options Defined by the 1985 Farm Bill

The Agricultural Adjustment Act of 1985 (AAA) offered by the Administration is aimed at achieving programs which do not affect price or quantity. Although rejected in the political forum, this policy has to be the long-run objective of other policy choices. The reason is simple: agriculture has to and will ultimately move toward greater market orientation. Such movement has been the history of agriculure and of every industry that has significantly deviated from competitive price and production levels. Oil, airlines, and automobiles offer a few examples. The two primary reasons for inevitability of market orientation are, first, the combined consumer, producer, and taxpayer costs become socially objectionable under nonmarket-oriented policies, and second, competition will ultimately emerge to undermine programs that seek to maintain nonmarket-oriented solutions.

Another set of proposals that are directed at eliminating government influence on price and quantity are those that call for very low loan rates, elimination of acreage reduction programs, and fixed per acre transition payments, which are phased out over time. The American Soybean Association's Farm Acreage Income Restitution (FAIR) program is an example. Sen. Boschwitz introduced a similar proposal in the Senate. These fixed payment transition programs are analytically similar to the AAA. As acreage reduction programs are phased out, production would rise, driving down farm prices and incomes. Eventually, lower prices would reduce crop production and production costs and expand exports, ultimately leading to higher prices. There is uncertainty over the timing of the response and these programs would cause a major adjustment in agriculture; consequently, support for them has been lacking.

Despite the inevitability of market orientation, this has been a big year for adherents of programs that would fix price and fix quantity to solve the surplus problem. This policy choice is embodied in proposals that would fix price well above market clearing levels, and they would attempt to fix quantity using marketing quotas so as to preserve this price and prevent surpluses. Such proposals lost convincingly in early fall on the floor of the House. The Senate Farm Bill has a provision for a marketing quota referendum, but for wheat only.

The policy choices have thus narrowed. Policies which affect neither price nor quantity have been judged as too costly in the short run for the farm sector. Policies which fix both price and quantity have been judged as too costly in the short run in the nonfarm sector and too costly in the long run for all sectors, including farming. Fixing price and letting quantity adjust can perpetuate surpluses, so there only remains fixing quantity and letting price adjust. Yet, there are an abundance of issues within this choice: how large should be the production adjustment, and how low should prices be allowed to fall?

The Congressional farm bills provide guidelines. The House bill bases minimum acreage reduction levels on projected carryover, allows paid diversions, and permits up to a 25-percent cut in price support levels. The Senate bill has maximum acreage reduction levels, allows paid diversions, permits large drops in loan rates, and mandates loan repayment levels as much as 30 percent below the loan rate (prior to the so-called Findley adjustment). The House essentially freeze target prices, while the Senate does so for two years.

From these evolving bills, one broad option for dealing with the current surpluses may be distilled: 1) frozen, or only slowly falling, target prices which will maintain production capacity; 2) production adjustment programs as used in the past, with the added requirement for a long-run land retirement program; and 3) lower market prices and loan rates. These provisions are very similar to those tried in the 1950's and 1960's--a combination of supply and demand adjustment. The major departure with recent programs would be sharply lower loan rates and repayment levels and long-run acreage retirement. And in the Senate, a major change is the prohibition on annual acreage reduction programs after 1988. In a sense, the Congressional proposals represent an experiment. The hypothesis is: sharply lower loan rates will greatly expand exports, reducing surpluses, and raising farm income. To limit damage should the hypothesis be rejected or require time for substantiation, income support programs remain essentially intact for several years.

Program Management Objectives for the Next Several Years

Assuming there is a 1985 Farm Bill that permits lower loan rates, it is likely that key provisions will rely on discretionary authority. Based on the conclusions of the earlier discussion of how we arrived at the surplus problem, successful discretionary programs that reduce current surpluses will likely have to include the following:

- A sharp drop in loan rates--to discourage production by foreign nations and program nonparticipants.

- Large acreage reduction programs--to offset the effects on production of high target prices. Also, these programs are the quickest way to reduce surpluses; lower loan rates and prices cannot cause enough of an increase in total demand to absorb unrestrained production and reduce carryover in the short run.

- Programs to prevent depletion of free stocks--to stop artificially high prices that would be inconsisitent with current huge carryover stock levels.

- Provisions for a manageable and accessible level of market-isolated buffer stocks--to limit price instability (limit shocks to domestic livestock industry) when surpluses are reduced.

If loan rates are not reduced substantially and acreage idled under annual programs and the conservation reserve does not significantly exceed 1985's 34 million acres, surpluses will likely grow. Moreover, even if those actions are taken, a squeeze on free stocks this season and in future seasons could raise prices to 1985 loan levels and above, encouraging U.S. and foreign production and curbing exports, and this could prevent a drop in surpluses.

The free stock problem could begin in 1985/86 as a large portion of production is eligible for loan. In mid-November 1985, loan placements for wheat and corn were 50 and 300 percent, respectively, above 1982's large placements. If this pace continues, some redemptions would likely be needed late in 1985/86, requiring loan-rate prices, or use of old-crop grain would be cut. The free stock problem could worsen in 1986/87 and subsequent years.

The policy objective inherent in the current leading legislative proposals is to draw down surpluses while idling acreage and to expand exports via low prices. However, the low loan rates and prices during 1986/87 would cause virtually all outstanding 1985-crop loans to be forfeited (or placed in reserve, if open). Only free carryover stocks plus reduced production would be available at low prices to satisfy domestic needs, expanded exports, and leave some free carryover. With large acreage reductions and/or bad weather in 1986, total demand could not expand. The only supplies which would be available to augment the tight free stocks would be those in the FOR or CCC inventory. Prices above $4.45/bu. for wheat and $3.15/bu. for corn would be needed to release FOR stocks. If the reserve were not in effect, CCC stocks could be sold at 115 percent of the lower loan rates in effect, otherwise CCC stocks could only be released at prices above FOR release prices. If lower 1986 loan rates were a certainty, it may be desirable to limit 1985-crop entries in the reserve. With the FOR in effect in 1986, the high release or resale prices are out of line with reduced loan rates, and they would propel the needed supply and demand adjustments in the wrong direction.

Grain markets have never had to make the adjustment from very excessive stocks-to-use levels to normal levels while excessive stocks remained isolated in CCC or FOR. The only analagous year was 1983, when shorting the market was

avoided by making diversion payments in commodities. The elimination of current surpluses may have to be accompanied by distribution of FOR and CCC stocks as either direct income support payments or land retirement payments. Otherwise, market prices could reach release levels, which would undermine the surplus reduction efforts.

Providing for an increase in free stocks to prevent artificial scarcity as total stocks are drawn down would allow large acreage reduction programs. The following table presents rough estimates of the total base acreage of program crops (wheat, rice, feedgrains, and cotton) that would need to be idled in 1986 in order to meet alternative levels of demand increases and carryover stock reductions from projected 1985/86 levels.

	Acres idled (millions)
No change in total use or carryover	62
Total use up 10% and carryover down 15%	60
Total use up 10% and carryover down 30%	80

A 10-percent demand increase is consistent with a 20-percent drop in prices and a one-year demand elasticity of .5. The acreage estimates compare with an estimated 34 million acres idled in 1985.

Conclusion

Dealing with surpluses by making prices competitive to raise demand, maintaining income support, and using acreage reductions to speed the adjustment and limit program outlays will have the following outcomes:

- It will not be cheap. CCC outlays for FY 1986 are estimated at $17-$20 billion (October base), compared with FY 1983's record $18.9 billion. Outlays under the House and Senate Committee Bills average roughly $18-$19 billion a year during FY 1986-88, comprised mainly of income support payments.

- It will cause continuing adjustment in the farm sector: financial stress, liquidations, foreclosures, declines in medium-sized farms, and the nonfarm sector dependent on acreage and farm income will continue to face depressed sales.

- It will cause criticism of programs that isolate stocks from the market. However, this view needs to be balanced against the situation when stocks are returned to normal levels. Lower loan rates mean more potential for price variability. There is a strong argument for a market-isolated buffer stock to limit variability and prevent a recurrence of 1974.

- It will have varying degrees of success, depending on the crop. Corn and soybeans have the best prospects for eliminating surpluses because underlying foreign demand is strong and will rise as income improves, competitors are limited, and yields are variable. Wheat, rice and cotton have the worst prospects. Competition is intense, yields are not very variable for wheat and rice, and technology is rapidly increasing global productivity.

Table 1--Forecasts of crop stocks for 1985/86 1/

Crop and year	Carryover stocks					1985-crop loans			
	Total	FOR	CCC	Outstanding loans 2/	Free	Made	Repaid	Forfeited	Placed in FOR
Wheat, June 1 (mil. bu)									
1985	1,425	654	378	178	215	800	100	385	315
1986	1,742	500	525	717	0				
Rice, August 1 (mil. cwt)									
1985	64.7	--	44.3	--	20.4	60.0	35	25	--
1986	81.2	--	65.2	--	16.0				
Corn, Oct. 1 (mil. bu.)									
1985	1,379	437	240	573	129	2,750	1,050	600	1,100
1986	3,052	650	500	1,825	77				
Up. Cotton, Aug. 1 (mil. bales)									
1985	4.0	--	.1	1.5	2.4	7.5	2.3	5.2	--
1986	8.8	--	1.3	5.6	1.9				
Soybeans, Sept. 1 (mil. bu)									
1985	318	--	4	157	157	550	400	150	--
1986	615	--	123	342	150				

1/ Projections as of November 12, 1985. Assumes no change in 1985-crop programs, lower loan rates and prices in 1986/87, no PIK programs in 1986/87, and 1985 grain can enter the reserve.

2/ Includes special loans.

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INTRODUCTION

I appreciate the opportunity to be with you today to discuss the world and domestic sugar situation and outlook. I will discuss in general terms the outlook for sugar production, consumption, trade, ending stocks and prices. At the follow-up session, I will be available to remark on specific aspects of my presentation, as well as developments in the sugar import quota program.

SUGAR PRODUCTION

The world sugar market continues to be depressed despite the fact that world centrifugal sugar production in 1985/86 is forecast to decline to 98.0 million tons (raw value), 3 percent less than the revised 1984/85 output of 100.7 million tons. Production is 3 to 3.5 million tons below peak levels reached in 1981/82, 1982/83 and 1984/85.

As we all know, the current depressed market situation derives from a sustained excess of production over consumption. Our recent experience indicates that production can be below trend and consumption can be above trend and there can still be a build-up of stocks, leading to depressed market prices. In 1985/86, we expect much of the same: compared to 1984/85, production will decline, consumption will rise and there will still be an increase in carryover stocks.

World sugar production from cane is expected to total 60.7 million tons (62 percent of total sugar production) and world sugar production from beets is expected to total 37.3 million tons (38 percent of total production). The expected decline in 1985/86 is primarily attributable to reduced production in Latin America, especially Brazil and Cuba.

Production in Brazil and Cuba is expected to decline by over 2 million tons. Brazil has planned to reduce its production by over 10 percent, from 9.3 million tons to 8.2 million tons. The planned reduction is specifically directed at export markets. In Cuba, production for 1985/86 is forecast at

7.0 million tons, down nearly 15 percent from 1984/85 production of 8.1 million tons. The production decline is attributable to adverse weather, including drought and, most recently, Hurricane Kate.

Sugar production in the European Community (EC), accounting for 14 percent of total world production, is forecast at 13.4 million tons, down slightly from its 1984/85 production of 13.6 million tons. Production declines in France, Denmark and the United Kingdom will more than offset increased production in West Germany, Belgium and Greece. The EC support price and import controls effectively insulate its producers from world market fluctuations. The 1985/86 support price is the same (in terms of European Currency Units) as it was in 1984/85. However, it may encourage production in some countries because of the relative depreciation of certain EC country currencies against other EC country currencies.

Sugar production in the Soviet Union for 1985/86 is forecast at a record 8.9 million tons, up 300,000 tons over last year's output. Sugar content will likely improve as a result of better handling procedures which leaves fewer beets exposed to late fall rains. In all likelihood, the increase in production will be reflected by reduced sugar imports.

South Africa's production is expected to decline from 2.5 million tons in 1984/85 to 2.4 million tons in 1985/86. However, despite this decline, with large carryover stocks, South Africa is expected to export one million tons during 1985/86.

Sugar production in Australia is forecast to decline slightly, but this should not affect Australia's share of the world sugar market. Sugar prodution in the United States is forecast at 5.4 million tons, about half from sugarcane and about half from sugar beets. Cane production is expected to decline in Florida and Hawaii and is expected to increase in Texas. Louisiana's production is expected to be lower than earlier estimates principally as a result of the effects of Hurricane Juan. Beet sugar production is expected to decline in California as a result of reduced yields brought on by virus diseases. Production in the Great Plains is expected to decline as a result of the closing of processing facilities owned by Great Western Sugar Company.

SUGAR CONSUMPTION

World centrifugal sugar consumption in 1985/86 is expected to increase to 97.5 million tons compared to 1984/85 consumption of 96.8 million tons. Consumption in developed countries, particularly those in North America and Western Europe and in Japan, continues to decline as a result of substitution of alternative sweeteners for cane and beet sugar. In the United States, as a result of actions taken by beverage companies in November 1984, nearly the entire market for sweeteners used in soft drinks will in 1985/86 be captured by high fructose corn sirup. By contrast, sugar consumption in developing continues in general to rise.

Nevertheless, world consumption is basically stagnating, with annual growth less than population growth. Consumption increases in the developing countries tend to be offset by substitution of alternative sweeteners in the developed countries thereby leading to generally flat year-to-year demand. This is occurring despite the general economic recovery underway throughout the world and low world sugar prices, both of which would normally tend to encourage increased consumption.

ENDING STOCKS AND PRICES

Depressed world market prices continue, reflecting what appears to be a perpetual tendency toward excessive world carryover stocks. In 1985/86 production will once again exceed utilization, leading to a 500,000 ton increase in ending stocks. Ending stocks will once again approach 50 percent of consumption and continue to bear down on the market.

Prices during the past year dropped to their lowest level since 1968 and in "real" terms were at historically low levels. The Number 11 Contract price remained below 5 cents per pound from July 2, 1984 through September 5, 1985, and averaged less than three cents per pound for the entire April-June, 1985 quarter. A few years ago, exporting countries were concerned about sugar prices of ten cents per pound. Now it may be the case that exporters would be delighted if the world price reached ten cents per pound, something which is not likely to occur in the near future. Prices do not begin to strengthen significantly until stocks drop to 25 or 30 percent of consumption, while current stocks are expected to continue to build, approaching 50 percent of consumption. The 25-or-30-percent rule of thumb implies that there needs to be a stock reduction in the neighborhood of 15 to 20 million tons. This will be difficult to achieve given the apparent tendency for production to decline from one year to the next while consumption increases over the same period and yet still have an excess of production over consumption.

CONCLUSIONS

What is abundantly clear is that burdensome ending stocks and the corresponding depressed world prices still are not signaling producers to curtail production. Part of the reason for this is that producers are insulated from world market fluctuations through a variety of domestic support programs. Another part of the explanation is that the amount of sugar which is actually traded "freely" at world market prices is very small, about ten percent of total world production.

We have recently estimated that in 1984, of total world net exports of 24.3 million tons, 11.6 million tons (or less) was actually traded at the average number 11 contract price of just over 5 cents per pound. The rest was traded under long term agreements and preferential arrangements (the latter include

the European Community's Lome Convention, barter trade between Cuba and the Soviet Bloc countries and various long term contracts between major exporting and importing countries). The average price of sugar covered by these arrangements was 21 cents per pound. As a result, in 1984 sugar exports actually moved at an average price of 13.5 cents per pound. This is clearly not sufficiently depressed to encourage a dramatic decline in world production. Certainly, in combination with domestic production supports, an average traded price of 13.5 cents per pound might actually encourage worldwide production increases. It might similarly be too high to lead to large increases in world consumption. At least, it might be concluded that substitution of alternative sweeteners in developed countries coupled with an average traded price of 13.5 cents per pound translates into a stagnation in world consumption.

Recently, prices have "strengthened" on the world market to just over 5 cents per pound. This is due principally to market expectations concerning production in and exports by Brazil and Cuba. However, it should not be overlooked that the projected stock buildup of 500,000 tons will be attempting to find its way into a "free" market of just over eleven and one-half million tons. In short, there are still sufficiently excessive supplies at this time to prevent a sustained, major recovery in world sugar prices.

The flat year-to-year consumption pattern that we have seen over the past several years likewise prevents a major recovery in world sugar prices. Alternative uses for sugar, such as for fuel and alcohol production, could spur consumption and bring demand more in balance with supply. In the United States, the recent decision to dramatically reduce the lead content in gasoline has created an octane gap which can be filled by ethanol. Part of this gap will be filled by domestic production of ethanol and part will be filled by imported ethanol which is produced from sugarcane. As a new outlet for sugar usage, this might reduce some of the burdensome world supplies and lead to some strengthening in prices. However, in order to dramatically reduce world stocks to price strengthening levels, you would have to locate a 2 billion gallon ethanol market, something which likely will not materialize for some years to come.

Barring production adjustments or a spur in consumption, the world market will continue depressed for the forseeable future. The market is currently so imbalanced that prices we considered to be low and depressed just a few years ago are now considered to be an indicator of market recovery.

U.S.SWEETENERS OUTLOOK

Summary

Domestic sugar production and consumption in fiscal 1986 are not espected to show much change from fiscal 1985, but 1986 prices will be strongly influenced by the domestic oversupply situation. Alternative sweeteners, particularly noncalorics, will continue to gain in use and to shift in relative importance among each other, but not as dramatically as in 1985.

Prices

Current U.S. raw sugar prices continue to reflect sugar oversupply in the domestic market. Although a market stabilization price (MSP) of 21.50 cents per pound, raw sugar, has been established for 1985/86 production, nearby futures prices (Contract No. 12, New York) in late November were about 19 cents per pound, substantially below the MSP. Nearby futures prices averaged 21.04 cents per pound in fiscal 1985, compared to 21.90 cents per pound in fiscal 1984. The CCC currently holds title to 303,680 short tons of raw cane sugar forfeited by processors last season as a result of loan defaults. Another 54 thousand (raw value equivalent) of refined beet sugar continue to be in CCC stocks.

Third quarter prices at different marketing levels reflect the decline in raw sugar prices. Wholesale prices in the Chicago-West market have dropped from 28 cents in 1982 to 23 cents in 1985. Retail prices rose from 32 cents in 1982 to 35 cents in 1984 but are down to 34 cents in 1985.

Prices of sugar-containing products vary in response to increases in sugar prices, depending on the sugar content of the product and other costs. Between January and September in 1985, retail prices of sugar-containing products rose 2.0 percent. Prices averaged 3.5 percent higher than the same period a year earlier. Bakery and cereal product prices rose the most, increasing 4.3 percent. Prices for other sugar-containing products increased considerably less, up only 2.7 percent percent for the first 3 quarters of 1985 over the same period in 1984. Prices fell 0.5 percent for other carbonated drinks reflecting the competitiveness of the diet soft drink market. Prices for sugar and artificial sweeteners also fell 0.5 percent as large supplies of sugar on the domestic market depressed wholesale prices.

Production

U.S. sugar production in fiscal 1985, according to the November Sugar Market Statistics, is 5.8 million short tons, raw value, the same as in the previous year. In 1985/86, production is estimated at 5.8 to 5.9 million tons, which would be in line with the 1981-1984 crop years average of 5.9 million. U.S.

sugar output has held steady since the 1981 Farm Act: beet sugar output in 1985/86 is estimated at 2.9 million tons, equal to cane output and about the same as the 1981-84 average.

U.S. sugarbeet acreage for harvest in 1985/86 is estimated at 1.098 million acres, marginally higher than last year. Acreage was higher in Idaho, Michigan, Minnesota, Montana, North Dakota, Ohio, and Wyoming. Partially offsetting these acreage increases will be lower acreage in California, Colorado, Nebraska, and no acreage planted this year in Kansas. Due to good growing conditions in most areas, yields are expected to average 20.5 tons per acre, up 1.5 percent from 1984/85. The only States where yields are expected to decline are California, because of problems with virus diseases, and Colorado. All the Colorado beet processing plants closed when the Great Western Sugar Company went bankrupt, and beet acreage in the State fell from 44.2 thousand acres to 2.9 thousand acres (to be processed in Wyoming).

Domestic sugarcane area (including acreage for seed) for harvest in 1985/86 is estimated at 757.9 thousand acres, up 1.4 percent from last year. Acreage is higher in both Florida and Louisiana, and lower in Hawaii and Texas. Louisiana's area, recovering from a bad freeze the previous season, is up 6.5 percent.

Prospective plantings of sugarbeets for the 1986 crop will be reported by USDA in February, and sugarcane acreage will be reported in July 1986. The pending Farm Bill of 1985 provides for continuation of an 18-cent loan rate, over the next 4 to 5 crop years, with an allowance for higher rates based on trends in inflation and cost of production. Such a support program should, as a minimum, stabilize acreage and production of sugarbeets and sugarcane.

Consumption

U.S sugar deliveries for domestic consumption approximated 8.1 million tons, raw value, in fiscal 1985 -- a decline of about 475,000 tons or 5.5 percent from fiscal 1984. Deliveries to the beverage industry fell nearly 600,000 tons, as anticipated, following the decision by the major cola companies in November 1984 to allow full replacement of sugar by HFCS in main-brand colas.

In other industrial uses of sugar, however, HFCS was near its technical capacity to replace sugar. Sugar use could therefore stabilize and even rise with growth in population and per capita income. Excluding beverages, deliveries of sugar for industrial use totaled 4.1 million tons in fiscal 1985, the same as in the previous year. Sugar use in bakery and cereal products actually rose 4 percent, on top of a 4.7 percent rise in fiscal 1984. Also, use was up 9 percent in ice cream and dairy products. In contrast, deliveries of sugar to the confectionery industry shrank by 85,000 tons or nearly 7 percent, not because of HFCS penetration but because of a shift toward products with less sugar content, as a way of meeting foreign

competition. The decline in U.S. confectioners' sugar use occurred despite an estimated 6.5 percent rise in 1985 shipments -- domestic candy shipments (about 80 percent of all confectionery use) increased 5 percent but imports increased by 40 percent.

Calendar-year 1985 U.S. sugar consumption is estimated at 8 million tons, raw value (including 75,000 tons of sugar in imported sugar mixtures), down 570,000 tons from 1984. In 1986, only a small decrease, possibly less than 50,000 tons is anticipated in sugar use. Although some further displacement by HFCS is likely, the loss may be largely offset by the 1 percent rise in population. Also, although real per capita personal disposable income is forecast to rise only 0.5 to 1.3 percent, the demand for sugar could be helped slightly. Through the rest of the 1980's, sugar use is projected to stabilize at about 8 million tons. Much will depend on income growth and the strength of alternative sweeteners competition.

Alternative Sweeteners

U.S. consumption of corn sweeteners in 1985 is estimated at 7.7 million tons, dry basis, up almost a million tons from last year. For the first time, U.S. corn sweeteners will exceed refined sugar consumption. Corn sweeteners in 1985 will be about 50 percent of U.S. caloric sweeteners use, compared with nearly 49 percent for sugar.

HFCS consumption leaped 800,000 tons in 1985, the largest single-year increase in its history. In the two years 1984 and 1985, HFCS use jumped 1.5 million tons, mostly at sugar's expense. An increase of 100,000 tons is anticipated in 1986 -- the net result of a relatively small further substitution for sugar, increased population and income, and some loss to noncaloric sweeteners competition. Future competition with noncalorics is difficult to gauge, but at 0.4 pounds per year, the loss would be about 50,000 tons a year -- about the same as demand growth from the increase in population. With a positive income effect, HFCS consumption could rise to about 5.5 million tons by 1990. However, this potential could be nullified by strong competition from noncaloric sweeteners, particularly in the soft drink market which accounts for nearly 70 percent of total HFCS use.

Soft drink industry sales volume rose an estimated 5.3 percent in 1985, largely in diet drinks. Diet drinks now make up nearly 25 percent of soft drink sales and are projected to rise to more than 35 percent by 1990. Consumption of diet drinks appears to have been boosted substantially by soft drink makers' shift to 100 percent aspartame (APM) this year (in place of an APM-saccharin sweetener mix). Trade sources estimate U.S. consumption of APM jumped to about 11 pounds in 1985, mostly at the expense of saccharin. Saccharin use is now estimated at about 6 pounds per capita, down from 10 pounds in 1984. (Noncaloric quantities are expressed in sugar-sweeteness equivalent, with APM 200 times and saccharin 300 times sweeter than sugar by weight.)

TABLE 1: World Production, Consumption and Ending Stocks

Crop Years	Production	Consumption	Stocks
	Million Metric Tons, Raw Value		
1972/73	75.1	77.7	17.2
1973/74	80.0	80.0	17.3
1974/75	78.5	77.1	18.9
1975/76	81.7	79.2	21.0
1976/77	86.3	81.9	24.8
1977/78	92.7	86.2	30.0
1978/79	91.3	89.6	31.0
1979/80	84.6	89.5	24.2
1980/81	88.5	88.5	24.2
1981/82	100.6	89.4	34.0
1982/83	101.3	93.8	41.4
1983/84	96.7	95.9	42.2
1984/85	100.7	96.8	45.7
1985/86	98.0	97.5	46.2

TABLE 2: SUGAR PRODUCTION BY REGION

Region	1983/84		1984/85		1985/86	
	Beet	Cane	Beet	Cane	Beet	Cane
	1,000 Metric Tons					
North America	2,695	5,942	2,730	6,078	2,736	6,222
South America	261	14,132	390	14,318	361	12,801
Central America	0	1,751	0	1,797	0	1,756
Caribbean	0	10,096	0	9,714	0	8,503
European Community	11,928	0	13,581	0	13,401	0
Other West Europe	2,297	10	2,245	12	1,988	12
East Europe	5,581	0	5,714	0	5,687	0
USSR	8,700	0	8,600	0	8,900	0
North Africa	498	1,028	516	1,295	495	1,275
Other Africa	0	4,993	0	6,034	0	6,047
Middle East	2,300	100	2,196	200	1,991	200
Asia	1,551	18,961	1,620	19,600	1,743	20,009
Oceania	0	3,689	0	4,027	0	3,900
Total	35,811	60,882	37,592	63,075	37,302	60,725

TABLE 3: SUGAR CONSUMPTION BY REGION

REGION	1982/83	1983/84	1984/85	1985/86
	Million Metric Tons			
North America	12.3	12.1	11.7	11.5
Caribbean	1.3	1.4	1.4	1.4
Central America	0.8	0.9	0.9	0.9
South America	10.7	10.8	10.9	10.9
European Community	10.2	10.0	10.2	10.1
Other Western Europe	2.8	2.8	2.8	2.8
Eastern Europe	6.0	6.0	6.3	6.3
USSR	13.0	13.3	13.4	13.5
North Africa	3.7	3.7	3.7	3.8
Other Africa	4.2	4.3	4.4	4.4
Middle East	4.5	4.8	5.1	5.2
Asia	23.4	24.7	24.9	25.6
Oceania	1.0	1.0	1.0	1.0
World total	93.8	95.9	96.8	97.5

TABLE 4: SUGAR IMPORTS BY REGION

Region	1981/82	1982/83	1983/84	1984/85
	1,000 Metric Tons			
North America	4,893	4,428	4,179	3,114
Caribbean	385	136	195	160
Central America	20	23	—	—
South America	823	988	706	386
European Community	2,402	2,111	2,734	2,726
Other Western Europe	1,009	1,015	871	883
Eastern Europe	1,115	1,038	1,365	938
USSR	6,883	5,926	5,600	5,400
North Africa	2,095	2,194	2,150	2,200
Other Africa	1,032	984	1,253	1,975
Middle East	2,593	2,715	2,825	2,845
Far East	5,826	6,369	5,520	6,060
Oceania	157	299	220	214
World total	29,233	28,226	27,618	25,901

TABLE 5: SUGAR EXPORTS BY REGION

Region	1981/82	1982/83	1983/84	1984/85
	1,000 Metric Tons			
North America	327	254	375	309
Caribbean	8,919	8,004	8,265	8,370
Central America	679	1,084	828	771
South America	4,335	4,284	4,070	3,745
European Community	6,855	6,776	5,988	5,475
Other Western Europe	240	316	194	207
Eastern Europe	479	838	751	760
USSR	268	165	250	300
Africa	2,567	2,635	2,211	2,578
Middle East	150	195	525	550
Far East	5,106	3,912	3,649	3,337
Oceania	3,052	3,127	2,890	3,136
World total	32,977	31,590	29,996	29,538

TABLE 6: AVERAGE RAW SUGAR PRICES
1975-1985

Year/Month	World Price No. 11 Contract	Domestic Price No. 12 Contract
	Cents per pound	
1975	20.49	22.47
1976	11.58	13.31
1977	8.11	11.00
1978	7.82	13.93
1979	9.66	15.56
1980	29.04	30.11
1981	16.93	19.73
1982	8.42	19.92
1983	8.49	20.04
1980:		
Jan-March	20.20	21.84
Apr-June	28.20	28.89
July-Sept	31.70	32.64
Oct-Dec	36.06	37.09
1981:		
Jan-March	24.69	26.50
Apr-June	16.44	18.76
July-Sept	14.25	17.33
Oct-Dec	12.35	16.34
1982:		
Jan-March	12.43	17.69
Apr-June	8.17	19.50
July-Sept	6.84	21.83
Oct-Dec	6.23	20.69
1983:		
Jan-March	6.19	21.62
Apr-June	8.93	22.52
July-Sept	10.17	22.28
Oct-Dec	8.67	21.75
1984:		
Jan-March	6.65	21.80
April-June	5.67	22.03
July-Sept	4.21	21.77
Oct-Nov	4.19	21.35
1985:		
Jan-March	3.68	20.67
April-June	2.96	21.11
July-Sept	4.21	20.44
October	5.01	18.68

Table 7. -- U.S. sugar production and harvested area, 1979-85 crop years

Year	Production			Harvested area	
	Beet	Cane	Total	Beet	Cane
	1,000 short tons, raw value			1,000 acres	
1975-80 average	3,390	2,730	6,120	1,098	705
1981-84 average	2,931	2,958	5,889	1,102	712
1984	2,902	3,007	5,909	1,096	701
1985 estimate	2,900	2,920	5,820	1,098	708

SOURCE: SRS and ERS, USDA

Table 8.--U.S. sugar deliveries to industrial and nonindustrial users, 1980, 1984 and Jan.-Sept. 1984 and 1985

Item	Calendar year		Jan.-Sept.		Fiscal Year (FY)		Percent change, FY 1984 to FY 1985
	1980	1984	1984	1985	1984	1985	
	Thousand short tons, refined 1/						
Bakery/cereal	1,337	1,404	1,061	1,132	1,418	1,475	4.0
Confectionery	932	1,114	850	788	1,132	1,053	-7.0
Processed Foods	535	433	344	345	436	434	-0.5
Ice cream/Dairy	450	408	314	347	404	440	8.9
Other	589	416	318	328	425	419	-1.4
Beverage	2,161	908	746	276	996	438	-56.0
Nonindustrial	3,353	3,053	2,211	2,299	3,036	3,141	3.5
Total, including non-food	9,477	7,863	5,942	5,609	7,978	7,531	-5.6

1/ Data do not include Hawaii. To convert to raw value, multiply by 1.07.

SOURCE: Sugar Market Statistics, SRS and ERS, USDA.

Table 9. --U.S. caloric sweeteners consumption, 1982-86

	Sugar, raw	Sugar, refined	HFCS	Total corn sweeteners, including HFCS, glucose, and dextrose	Honey and edible sirups	Total
			Pounds per capita, dry basis			
1982		73.7	26.7	48.2	1.3	123.2
1983		71.1	30.7	52.2	1.3	124.6
1984		67.5	36.3	57.9	1.4	126.8
1985		62.6	42.7	64.2	1.4	128.2
1986		61.8	43.1	64.6	1.4	127.8
			Million short tons, dry basis			
1982	9.160	8.561	3.097	5.595	0.151	14.307
1983	8.917	8.333	3.600	6.120	0.153	14.606
1984	8.569	8.008	4.300	6.844	0.165	15.000
1985	8.000	7.477	5.100	7.669	0.168	15.314
1986	7.972	7.450	5.200	7.793	0.169	15.412

SOURCE: ERS, USDA.

Table 10.--U.S. sugar supply and use, fiscal years 1984/85 and 1985/86

Item	FY 1984/85 1/	FY 1985/86 2/
	1,000 short tons, raw value	
Beginning stocks	1,611	1,745
Production	5,830	5,855
Receipts from Puerto Rico	74	35
Imports, total	2,571	2,771
Sugar blends	75	75
Quota-exempt	344	366
Quota	2,152	2,330
Total supply	10,086	10,406
Exports	415	400
Domestic use	8,175	7,960
Refiner loss and statistical adjustment	-249	347
Total use	8,341	8,707
Ending Stocks	1,745 3/	1,699

1/ Preliminary. 2/ Estimate. 3/ Of which possibly 297,000 tons sugar offshore receipts held in bond but not entered for U.S. consumption nor registered in U.S quota-exempt programs as of Sept. 30, 1985.

SOURCE: Data are from Statistical Reporting Service, Sugar Market Statistics. Beginning fiscal 1983, imports based on Customs data for quota sugar and company data for quota-exempt sugar; exports based on Census data. Estimates are from Interagency Estimates Committee, USDA.

REGULATORY AND COMPETITIVE PROSPECTS FOR ALTERNATIVE SWEETENERS

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SUMMARY. Sweetener competition never has been keener: 1. Politics artificially raises sugar prices thereby encouraging use of less costly alternatives and opening the way for intensified international competition. 2. Manipulated cane and beet sugar prices contribute further to corn sweetener price advantage, the lower prices increasing use and resulting in corn sweetener consumption surpassing sucrose. 3. Technology succesively ushers in a broad range of competitively priced alternative sweeteners enabling a "multiple sweeteners" regulatory approach spreading any risks among many sweeteners instead of overreliance upon a few. 4. Finally, sedentary lifestyles create a need to curb caloric intake and accelerate use of calorie-controlled sweeteners the use of which may supplement not supplant caloric sweeteners, at least in the near term.

HISTORICAL SUCCESSION OF SWEETENERS. No sweetener has a perpetual lockhold as the preferred dietary mainstay. An historic panorama of sweetener use reveals a continuing succession of sweeteners as dietary mainstays: 1. Nature's ready-to-eat sweeteners (honey, dates, dried fruits, and so forth), provided the first sweeteners used by humans and remained the mainstay for dietary purposes over tens of thousands of years. 2. Canesugar for several thousand years served as the dominant sweetener. 3. Corn sweeteners over the past few hundred years steadily grew in favor until recently when they became the dominant sweetener in the U.S. and stand to be the sweetener of choice for many decades to come. 4. Chemical synthesis of low calorie sweeteners which got underway little more than a century ago are, in the aggregate, poised to become the dominant sweetener sometime beyond the year 2000. 5. Advanced biotechnologies, long underway via fermentation, are just not on the verge of coming into their own. Recombinant DNA-manipulated intermediates used in corn sweetener production will be approved, I believe, in 1986 by FDA. This milestone event will open a new floodgate of low-cost/high production yield processes that will revolutionize many traditional processes of sweetener production (as well as for other food products). Eventually, bioengineering may become the main generator of sweeteners.

Many current chemical technologies such as acid hydrolysis which are used to extract sweeteners pose nagging health and safety questions. Search for safer new sweeteners continues. Hundreds of natural and synthetic sweeteners are being investigated worldwide. Hundreds, perhaps thousands of patents covering novel sweeteners, new uses and processes have been or are about to be patented. Patent surges are an early indicator of what's on the commercial horizon. Judging from on-going activity, I anticipate a surfeit of sweeteners suited to every possible use and taste. Use of many different sweeteners will spread unrecognized risks which might be accentuated by overreliance upon any one or few sweeteners.

NOVEL NATURAL SWEETENERS. Non-traditional or undeveloped potential sources for extracting "natural" sweeteners include: 1. Fruits and Berries:

Katemfe fruit (Thaumatin I & II); serendipity berries (Monnelin); Lo Han fruit (triterpenoid glycoside); Mountain ash berry (xylitol). 2. Trees: sap (diterpines). 3. Vegetables: globe artichoke (chlorogenic acid); onion, asparagus, artichokes ("neo-sugar"). Plants: stevioside (stevia); Lippia dulcis (Hernandulcin); Hydranga marophylla (phyllosdulcin); Perilla Namkemonsis (Perillartine); Ti plant (levulose); Polypodium Vulgare L. (Osladin); Gymnema sylvester (glymnemic acids); Glycyrrhiza glabra L. (glycyrrhizin). Starches:manioc; grain sorghum; sweet potatoes, potatoes; wheat.

WASTE BY-PRODUCT POTENTIALS. Another range of developments worthy of note involves continuing efforts to find practical uses for various wastes. Converting wastes into valuable byproducts minimizes potential environmental insults associated with traditional disposal, avoids squandering resources, and maximizes economic value. Citrus rinds yield a number of sweeteners, including neohesperidin dihydrochalcone for which over 250 analogues have been developed; the sweetness of some of these compounds range up to 4,000 times that of sucrose. Approval for use already has been granted by several nations. Polysaccharides derived from cornstocks and corncobs, cottonseed hulls, wood chips, shells of almonds and pecans -- to mention a few sources --have been converted into sweeteners such as xylitol. Whey wastes yield one of the most intriguing stories concerning sweetener recovery. Each pound of cheese produced generates 9 pounds of whey which had been considered a highly polluting effluent the disposal of which posed considerable difficulties. Lactose, comprising 70% of whey solids, can be hydrolyzed into glucose and galactose. Corning Biosystems (Corning Glass) has developed an immobilized enzyme technology for hydrolyzing lactose into glucose and galactose. A well-conceived integrated operation to watch as a bellwether has been undertaken by Corning Biosystems and Kroger. Cheese producing plants owned by the huge grocery retailer extract the sweeteners from whey byproducts, transport them to Kroger's own nearby bakeries, then utilize them in the manufacture of Kroger's house-brand bread and bakery products. Biotechnology intermediate materials to increase productivity of such a system are a virtual certainty over the next decade. French and English technology is still further ahead in whey solids extraction, having devised ultra-filtration techniques so cost effective that typical small-sized dairy operations may be able to utilize them.

NEW COMPETITION FROM "ENGINEERED" SWEETENERS. The staid sweetener industry is entering a new era of unprecedented competition. Markets no longer can be taken for granted. Competition among sweeteners escalates as more and more alternative sweeteners are discovered, developed and approved for use. Among them are extraordinary high-intensity sweetners. I have held in the palm of my hand a container with sufficient sweetening power to satisfy requirements of an entire lifetime! Contrast that to the six tons, more or less, of caloric sweeteners consumed over a lifetime at current levels of consumption (caloric sweetener consumption totalling 158.3 lbs. per capita in 1985 -- corn sweeteners 79.8 lbs. + cane/beet sugar, 76.8 lbs. + minor caloric sweeteners, 1.7 lbs. -- multiplied by life expectancy ranging from 75-80 years, equals 11,872 - 12,664 lbs. (approximately 6 tons) theoretical maximum lifetime consumption).

Comparing the sweetening equivalency of sucrose (SES) of 150 sweet-tasting compounds revealed 44 with a SES below that of sucrose; 40 with a SES 1-49X

above sucrose; 35 with a SES 50-499X beyond sucrose; and the remaning 32 sweeteners possessing a SES 500-55,000X that of sucrose. This partial enumeration depicts a considerable range of sweetening power, leaving to imagination the probable range of the hundreds of sweet-tasting substances that might fully fill out this array. This tabulation would be greatly expanded if the count had included: stereoisomers, analogues (at least 250 alone for the dihyrdrochalcones), species from which various sweeteners were derived (more than 154 for stevia alone), natural as well as synthesized counterparts, and "patent blanketing" covering related compounds (in an effort to protect inherent uniqueness of a "core" compound).

Trichlorogalactosucrose -- TGS it has been dubbed -- under development for ten years and 650 times sweeter than sucrose, is a much awaited entry. This high-intensity sweetener based on sucrose may be submitted for approval in the U.S. (and other nations) during 1986. So intensive have been the preparations and testing of this compound that when finally submitted for premarket approval the regulatory response should be swift and decisive.

One high-intensity sweetener among many recently discovered in France reportedly is 55,000 times sweeter than sucrose. Soon after discovery and patenting (on March 23,1984) license rights stemming from this range of French patents (based on serine as well as upon other proteins) were acquired by Searle. The family of new sweetener discoveries provide a potential for a second generation of "Super-Aspartame"/Aspartame II sweeteners. If any of them survive rigorous clinical review, obtain premarket clearance, and prove cost-effective they could become the greatest success product(s) to hit the marketplace.

SACCHARIN BAN - REINSTATEMENT - PROPOSED BAN - MORATORIA. Saccharin has had a beleaguered regulatory status, episodically teetering on the brink of being banned/restricted but somehow managing to hang in there. Some writers attribute the earlier 19th century saccharin bans to adulteration questions posed by beet and cane sugar interests. Certainly this was an important theme in ensuing legislative campaigns to delimit use of upstart new "synthetic" products. But it is not the whole story. Saccharin introduction at the turn of the century was not exactly welcomed by the Sugar Trust which existed at that time. Development of a variety of processed foods less costly than traditional foods against which they competed were disrupting many established categories. Margarine waged a bitter war with butter. Lard was being assaulted by vegetable oils. Mellorine threatened ice cream. Cider vinegar faced competition from synthesized counterparts. Soap began to compete against synthetic detergents. Rectified (blended) whiskey competed with traditionally distilled straight whiskey. Saccharin posed a potential threat to King Sugar. The battle lines were drawn in all of these sectors. A spate of obstacles impeding indroduction of these products were interposed by the states. In several states margarine was required to be tinted pink or blue so as to distinguish it from yellow butter - perhaps that experience was behind the blue and pink colored sachets that identify packets of low calorie sweeteners from packets of sucrose. States at the time still were the locus for what little governmental intervention there was with the economy. Eventually product-specific statutes gave way to across-the-board adulteration statutes.

France, at the time a preeminent world leader and dominant influence in scientific affairs, banned saccharin in 1890. Germany, Spain and Portugal followed suit, banning saccharin in 1898. Shortly after the turn of the century the U.S. banned saccharin for the first time. When canners sought to use saccharin as a sweetener back in 1907, Dr. Harvey W. Wiley, Chief of the USDA Bureau of Chemistry, attacked contending safe use in foods had not been adequately demonstrated. In 1908 Wiley proposed banning saccharin use in foods complaining, "Everyone who ate that sweet (canned) corn was deceived...he thought he was eating sugar when, in fact, he was eating a coal tar product (emphasis added), totally devoid of food value and extremely injurious to health." Wiley had a vendetta going against all food additives derived from coal tars, and succeeeded in banning a number of such products. In 1910 saccharin was banned from use in canned foods, most states already having taken a similar position by that time. President Theodore Roosevelt (whose doctor had recommended his use of saccharin) disagreed with Wiley, and in 1911 a Referee Board of Scientific Advisors to the Secretary of Agriculture was appointed to review the issues. Christian Herter and Otto Folin conducted the review, issuing USDA Report No. 94 on Nov. 15, 1912 which found saccharin an adulterant but not injurious to health. In 1912 a ban was imposed prohibiting saccharin use in confectionery products, soft drinks and food but allowing use in chewing tobacco. Shortly thereafter the ban was lifted when World War I (1917-1918) thwarted sugar imports. In 1919 court action was undertaken by Monsanto Cheimcal Works to forestall reimposing the ban. The court fight was eventually successful, the case finally being dismissed in 1925 and saccharin use was permitted in tablet form. Once again, on March 9, 1977, FDA (successor to USDA's Bureau of Foods) sought to ban saccharin, having concluded it induced cancer in test animals. In the following month over 40,000 letters were received by FDA, and over 90 bills were introduced in Congress to avoid the ban. The Saccharin Study and Labeling Act of November 23, 1977 forestalled the ban until June 30, 1981. Subsequently the moratorium has been extended several times, the most recent extension allowing saccharin use until March 1, 1987. Depending upon the intervening availability of several new sweeteners prior to 1987 -- acesulfam-K, Thaumatin, stevia, for example -- yet another extension of FDA's proposed saccharin ban is unlikely. Or, if permitted, authorized levels of use and manner of distribution could be severely tethered.

FATE OF CYCLAMATES. Reinstatement of cyclamates in the U.S. also remains a dim prospect, even though the sweetener(s) are approved for use, at least for some purposes, by a number of countries. A barrage of new studies could clear the way for approving at least some limited uses in the U.S.

ACESULFAM-K: FORTHCOMING U.S. PREMARKETING APPROVAL. Acesulfam-K already has been approved or indicated for use for varied purposes by nine nations: Bulgaria, Russia, U.K., West Germany, Switzerland, Belgium; approval also has been announced by Australia, New Zealand and South Africa. A 1978 petition to allow food uses in the U.K. received resounding approval in 1983 when the sweetener (along with aspartame) won "the highly coveted "Group A" status, the safest classification accorded. U.K. approval expressly recommended use of acesulfam-K in soft drinks without limitation. (Because soft drink consumption in the U.K. is modest, this endorsement does not mean as much as it would in the U.S. where consumption is much higher.) U.S. patents for the

sweetener date back to 1975; an initial master file was deposited with FDA back in 1979; and a food additive petition eventually was filed with FDA three years later on Septemeber 10, 1982. The 15-volume petition requested use of the sweetener in: dry beverages; chewing gum; confections; canned fruit; gelatins; puddings and custards. Premarket approval has not yet been granted in the U.S. but action may be forthcoming. Safety, functionality, environmental impacts, purity/identification, consistency of test product and replicability of various tests are undergoing searching review. Studies to establish food use, initially were conducted from 1967-1978, and are continuing. Last February I forecast acesulfam-K would receive FDA premarketing approval between 1986-1988. The September 10, 1982 FDA petition had been held inadequate in November 1984, then last April 1985 FDA Commissioner Young stated that several questions had been raised and that additional information had been requested. Considering recent developments, the 1986-1988 timetable remains realistic.

REGULATORY STATUS OF MAJOR LOW-CALORIE SWEETENERS. Low calorie sweeteners have been a subject of relentless debate concerning relative safety. Every major low calorie sweetener proffered for human consumption over the past century -- saccharin, cyclamates, aspartame, xylitol as well as other sugar alcohols, to mention a few -- have been buffeted by regulatory attacks. The on-again/off-again checkered regulatory status which has been suffered by these low calorie sweeteners has highlighted uncertainties and fears. This vacillation has helped to discourage use.

Among the major low calorie sweeteners approved for use in some manner either in foods and/or pharmaceuticals (as of 1984 or 1985): saccharin in 96 nations; cyclamates in 57 nations; aspartame in 41 nations; sorbitol in 11 nations; xylitol in 11 nations; acesulfam-K in 9 nations; mannitol in 6 nations; neohesperidin dihydrochalcone in 4 nations; stevioside in 3 nations; thaumatin in 3 nations (country totals indicate only known nations and is not an all-inclusive survey covering all nations).

IMPACT OF INTERNATIONAL ADI STANDARDS ON REGULATORY APPROVAL BY INDIVIDUAL NATIONS. Levels of use recommended for food additives -- including synthesized sweeteners -- put forward by the Joint Expert Committee on Food Additives (JECFA) of the U.N. World Health Organization have global ramifications. The standards represent general consensus among scientists the world over. Such standards help promote uniformity and avoid diverse standards among nations which can fetter the free flow of international commerce. JECFA acceptable (maximum) daily intake (ADI) recommendations commonly are expressed in terms of milligrams per kilogram of bodyweight (mg/kg/bw). Aspartame's ADI (expressed in terms of mg/kg/bw) is greater than the combined ADI's for four other sweetener compounds: 2.5 for saccharin; 9.0 for acesulfam-K; 11 for cyclamates; and 25 for isomaltitol. The last mentioned substance, isomaltitol is a polyol and bulking agent consisting of 45-65% sucrose from South German Sugar works; other bulking agents for low calorie sweeteners include glucosylsorbitol from G.D. Searle, polydextrose from Pfizer, and malitol from Hayashibara Biochemical Laboratories).

While a considerable number of supplemental food use petitions for aspartame are pending at FDA, further approvals may be slow in coming. Additional

approvals hinge to a large extent upon consumption survey data required to be filed by the manufacturer with the FDA. Runaway success of aspartame current levels of use, at least among high user cohorts, may have bumped up against current ADI ceilings. If so, prospects are bleak for approving new categories of use. On the other hand, such a state of affairs would bode well for approval of additional alternative sweeteners.

INCREASINGLY DEMANDING FOOD SAFETY TESTING. Food safety testing steadily evolves and becomes more sophisticated and demanding. Steadily advancing analytical techniques now are capable of discerning parts per quadrillion. Refinement and rigor of clinical tests and animal studies constantly are extended. Requirements have shifted from acute and immediate impacts, to ones that are chronic and long-termed, even multi-generational. Allegations of neuro-transmitter dysfunction and brain chemistry abnormalities triggered by ingestion/inter-reactions of aspartame and other dietary components provide a recent example of these extensions. Tests increasingly encompass ever more subtle changes, pre-clinical dysfunctions, psycho-kinetic phenomena, subjective states, moods, and so forth. Before the thalidomide tragedy very little consideration was given to the possibility that food or drug components would cross the placental barrier of pregnant women and affect the fetus. All of that is history now. Recent concerns concerning food-drug impacts now are directed to impacts upon human sperm and ovum prior to conception thereby extending tests to include predisposing factors prior even to the actual consummation of conception.

COST COMPETITIVENESS OF ALTERNATIVE SWEETENERS. Pondering the realities of price competition, especially the impacts posed by development of sweeteners thousands of times sweeter than sucrose -- at least one of them 55,000 times sweeter -- makes sense. The total number of different sweeteners might number as many as 1,000, according to estimates. At least 25-50 serious investigational efforts are underway worldwide to develop new congeries of commercial sweeteners. One thing for sure: more alternative sweeteners are becoming available, most of them at very competitive prices. Four calorie-controlled sweeteners available in markets around the world (saccharin, cyclamates, thaumatin and stevia) achieve a sucrose sweetness equivalency amounting to a cost of only 1-6¢ per pound. Acesulfam-K in low volume production recently has been selling for 15-16¢ lb./SES. New acesulfam-K production capacity and resulting economies of higher volume mass production probably will permit cutting prices to a fraction of what have amounted to experimental and introductory production level costs. (Bulking agents and other additives, it must be recognized, could add to these price comparisons.)

Aspartame also stands on the brink of lowering its premium price. Artificially high sugar prices have helped enable aspartame to maintain it premium price. Aspartame recently priced at $90 lb. (50¢ lb./SES) is available to large-volume users at a discount price of $54 lb. (30¢ lb./SES). Cost of production is estimated at approximately one-third the regular selling price. Processing technology improvements, new techniques for producing intermediate components of production, the impending perfection of recombinant DNA and other biotechnologies will further reduce cost of producing goods by 20-30%, possibly even more. As output further increases, economies of scale and new production

efficiencies will encourage prices to be lowered. Worldwide annual aspartame production capacity ranges between 9-11.5 million pounds, and may reach 28 million pounds within just a few years. Competition with a growing range of alternative sweeteners also will help to prompt price reductions.

OWNERSHIP CHANGES AMONG MANUFACTURERS. On July 19, 1985, Monsanto --with a very long history in pioneering low calorie sweetener manufacture, and perhaps one of the most forward-looking and best managed high-technology chemical specialty manufacturers in the world -- re-entered the low calorie sweetener field. Monsanto acquired during 1985, at a cost of $2.7 billion, Searle's operations, including manufacturing of aspartame, the runaway best selling low calorie sweetener. Monsanto Chemical Works of St. Louis initiated U.S. production of saccharin back in 1901. During the 1960's there were only four domestic manufacturers of saccharin products, including Monsanto which still ranked as the nation's largest producer. In 1977 Monsanto abandoned the saccharin field, leaving Sherwin-Williams as the sole manufacturer. During the fall of 1985 Sherwin-Williams sold its chemical division, including saccharin production capabilities, to PMC, Inc. of Sun Valley. To keep up with the players you have to stay on your toes.

COSTLY BURDEN OF GOVERNMENT PRICE/TRADE SUPPORTS FOR SWEETENERS. Sugar prices have been maintained at artificially high price levels for many decades. The time may have come for "paying the piper." It is difficult to understand why sugar should continue to be artificially propped and supported by the government. After all, bananas (or other tropical products) grown in climate-controlled greenhouses could be commercially viable domestic crops -- if the government deigned to subsidize growers and ban/restrict cheaper offshore competitors. But the costs would be prohibitive. It makes better sense to rely upon supplier nations which enjoy comparative economic advantages which enable them to beat other competitors in terms of quality, quantity and price. This is the free marketplace at its best. Perhaps the best advice to cane and beet farmers who aren't making it is simply to move on. That's the same message I keep hoping government policy makers will give to any for-profit enterprise with dismal performance records. If markets and incomes for cane and beet interests are protected and guaranteed, why shouldn't similar protection be extended to every line of faltering enterprise? Where does such maddness stop?

In the end it is the consumer and the taxpayer who bear the burden for carrying the few sugar growers and processors who reap special benefits. Over the last decades on only a very few short term occasions have government supports for sugar benefited consumers with lower prices. The welter of artificial government props and supports have made the cane and beet sugar industry a millstone around the necks of taxpayers and consumers. Raw sugar consumption in the U.S. during 1985 is expected to total 7.9 million short tons (15.8 billion pounds). Assuming raw sugar prices for 1985 at 22¢ lb. in the U.S. and 3¢ lb. in the world market, the difference between the two prices at 1985 use levels -- $3,476,000,000 vs. $474,000,000 -- means that U.S. taxpayers/consumers paid out $3,002,000,000 more than they might otherwise (at least theoretically) have paid had they been able to obtain sugar at world market prices. Now that's only the $3 billion Americans chipped in to help cane and beet

interests. The extent to which corn sweeteners, minor caloric sweeteners and calorically controlled sweeteners have been able to raise prices because of the high price umbrella for sugar, also is to be considered. Conceding there is some unfairness in drawing the above conclusions, I have done so merely to dramatize a sorry state of affairs in which the industry finds itself. High sugar prices haven't exactly benefited cane and beet sugar interests. Refined sugar, sitting fat as a result of pumped-up governmentally-manipulated, artificially contrived domestic prices, has been selling for 26¢ per pound -- 26 times the cost of saccharin!. Chief rivals of cane and beet sugar are the corn sweeteners which have been selling for 13-23¢ per pound, substantially less than sucrose. No wonder consumption of cane and beet sugar has nosedived so fast!

INTERNATIONAL PRICE COMPETITION: THE JAPANESE CHALLENGE. Beyond domestic pricing wars and woes brought on by super-high domestic sugar prices is the looming specter of international price competition. Japan has been a major factor in the worldwide production of chemically synthesized sweeteners and Japanese manufacturers have dominated low calorie sweetener exports for years. I expect Japan to assiduously seek global domination -- or at least a major share of market -- for chemically/biologically-synthesized alternative sweeteners, capitalizing upon their inherent strengths in fermentation and biotechnologies in particular. Undertakings such as these are not land dependent. Relatively modest sized plants can produce prodigious quantities of value-added end products -- just Japan's cup of tea. Currently, a single domestic supplier, operating at considerably less than full capacity, has been able to satisfy domestic needs for saccharin. Aspartame manufacture worldwide has been met by one company operating as few as five facilities. High intensity sweeteners, soon to be introduced almost certainly will be able to supply worldwide demand with production from a single plant. Land based, labor intensive traditional sugar crops will be steadily under siege by the fine chemicals industry in the years ahead. Korea, as well as Japan, will provide the competition.

"Japan bashing" has numerous adherents these days. I feel credit should be given when due. If Japan can develop a better product, then produce and sell it for less, so let it be. While consumers welcome better deals, well-ensconced interests that stand to lose in onslaughts of competition are expected to protest vehemently. Japanese fermentation technologies for processing intermediate components used in aspartame manufacture have been crucial to success of the product. Toyo-DSM Aspartame VOF established April 22, 1985 is a new joint Dutch-Japanese venture getting underway to invade Searle's domain by marketing their own versions of aspartame-like products. Biotechnology manipulated processes perfected in Japan are at the heart of enhanced corn sweetener competition. In the late-1960's multiple enzyme dextrose and high fructose conversion advancements were largely made possible by advances in fermentation chemistry from Japan. Biotechnology-manipulated processes --once again perfected in Japan -- continue to further enhance corn sweetener productivity, increase purity, and open the way for still lower prices. Pending since 1984 at FDA is an application to approve a pace-setting recombinant DNA-manipulated microorganisms used in corn sweetener production. Approval, which I expect to be forthcoming during 1986, will establish a precedent that opens the way for a near-torrent of biotechnology-manipulated direct and indirect

additives, including a large number used in the production of starch-based sweeteners. Biotechnologies will make possible productivity increases, products of greater purity, and other functional improvements which will serve to further heighten the competition among the ever-growing profusion of sweeteners. The days of King Sugar are fading.

Domestic saccharin manufacturers have been faced by increasingly stiff international competition. Japan has long been a formidable competitor in this area. A more recent entrant is South Korea which has consciously targeted saccharin as a major commodity destined for trade in international markets. U.S. imports of saccharin totalled 5.9 million pounds in 1983, and declined to 3.94 million pounds in 1984. Domestic production of saccharin in 1984, by contrast, amounted to only 5.0 million pounds. Japan and Korea have become formidable competitors in a little noticed trade war involving skirmishing over low calorie sweeteners. Given the growing importance of fermentation processes and biotechnologies in the manufacture of corn and protein-based low calorie sweeteners, Japanese competition will be particularly tough.

FOUR SWEETENER REPORTING CATEGORIES TO FACILITATE DIETARY ASSESSMENT. Useful comparisons, particularly important because of dietary excesses and the growing importance of preventative health care made possible by sound nutrition, are facilitated by arraying total sweetener use in four separate reporting categories: 1. Corn and Minor Caloric Sweeteners; 2. Cane and Beet Sugars; 3. Naturally Occurring Sweeteners; 4.High-intensity and Non-Caloric Sweeteners. This is not much different than what is now done by USDA-ERS, with the exception of adding "naturally-occurring" sweetener estimates (based on the excellent work by USDA's Friend, Marston, Page, Peterkin & Welsh). Such a composite shows: 1. Cane and beet sugars recently declining, rapidly plunging from 107 grams in 1979 to 76.8 g. in 1985, an astounding decline of 28% in only six years! 2. Corn sweeteners taking up the slack -- which, along with minor caloric sweeteners, increased from 13 g. in 1909-13 to 80 g. in 1985, an impressive increase amounting to over 500%. 3. Naturally increasing sweeteners increasing somewhat, rising from 51 g. in 1909-13 to an estimated 65 g. in 1985, representing a 27% increase. Naturally occurring free sugar content (fresh basis) are suprisingly high: pea seed (Pisum sativum), 14.06%; soybean (Glycine max), 7.99%; Alaskan pea (Pisum stivum), 6.89%; grape (Vitus labruscana), 18.53%; sweet cherry (Prunus avium), 14.09%; apple (Pyrus malus), 10.99%. Proportions are much higher on a dry-weight basis. For example the edible portion of dates consist of 63.9% total sugars (glucose, 32.0%; fructose, 23.7%; and sucrose, 8.2%).

Caloric sweetener consumption daily per capita for 1985 (calculating all sugars at 4 calories per gram) totals a staggering 972.3 calories (and is even higher if the sucrose equivalency of low calorie sweeteners amounting to 260 calories is added which brings the sum-total to 1,232.3 calories!). Considering just the caloric sweetener intake of 972.3 calories (328 calories from corn sweeteners and minor caloric sweeteners; 307.2 calories from cane and beet sugars; and 260 calories from naturally occurring sugars), from these estimates, consumption of total caloric sweeteners amounted to a hard-to-believe 28.2% of total daily caloric consumption - or, an even more astounding 35.7% if you add the sucrose equivalency of low calorie sweeteners! Calculations were

based on 1984 caloric intake totalling 3,450 calories daily from all sources, against which the 973.2 calorie intake from caloric sweeteners (1985 level) figures out to be 28.2% of total daily caloric intake! Low calorie sweetener consumption expressed in terms of sweetness equivalency to sucrose totalling 65 grams could (theoretically) have displaced daily consumption of caloric sweeteners equivalent to 260 calories. This 260 calorie value represents 7.5% of total 1984 caloric intake (3,450 calories daily). Adding this 260 calorie value to the 972.3 calories derived from caloric sweeteners brings the total to 1,232.3 calories, an amount representing 35.7% of the 3,450 total daily calorie consumption. There is an anomaly in all of this: low calorie sweeteners do not appear to supplant but apparently (at least at current use levels) tend to supplement total sweetener use! More about that later.

ACCURACY OF DISAPPEARANCE/CONSUMPTION/BIOLOGIC AVAILABILITY DATA. Disappearance data, to say the very least, overstates actual consumption. At the 1979 White House National Conference on Nutrition I outlined a model for more realistically appraising food consumption. To begin with, government estimates (because of incessant reevaluation, statistical errors, altered methodology, changed reporting periods, and a wide variety of other factors often result in a constant juggling of statistics, even from the same reporting source) appear to vary by as much as 10%. Second, surveys measuring retail food sales, consumer market basket surveys, and household consumption survey data indicate levels of consumption that tend to range 10-20% lower still from statistically-adjusted disappearance data. Third, what actually is offered for consumption and actually gets taken into the human organism (not fed to the dog, left as trimmings or discards, dropped on the floor or spilled, and so forth), suggests still lower intake levels. Taken together with biological availability of ingested foods/food components which can vary enormously (biologic makeup of the target organism, metabolic deficiencies/dysfunctions, broad range of bioavailability hinging upon forms/menthod of presentment, enhancing/detracting influence of other ingested foods/drugs, state of health, and so forth can alter actual availability of nutrients/food components), actual human availability may be yet another 20% lower. (A 44-year old Swedish woman consumes 20,000 calories daily, consumes 11 full meals daily, weighs only 141 pounds, stands 5 feet, four inches tall. Her extraordinary consumption requirements are due to an affliction with Crohn's Disease. This anecdote underscores the consumption variances among humans.) When all such considerations are factored actual human availability may be as much as 40-50% lower than indicated by disappearance data.

CALORIC INTAKE DECLINING IN RESPONSE TO LESS ARDUOUS WORK/LIFESTYLES. Daily caloric intake per capita was in the 3,500 range during the early-1900's as America shifted from an agricultural to an industrial based economy. During the 1950's - 1980's as America shifted first to a less arduous service-based economy and then became still more sedentary transforming itself into a knowledge-information-education based economy, reduced caloric output requirements pushed intake levels lower still. During this current transition period calorie consumption has been averaging 3,300 - 3,400 calories daily. Less arduous energy-demanding type work associated with exercising brains not brawn, steadily diminishes the amount of energy (calories) required to maintain bodily well-being. All told, sedentary lifestyles, increased leisure time, widespread

availability of labor-saving devices, and -- undergirding it all -- full-scale shift to a post-industrial economic base, comprise the basic changes responsible for reduced human energy (calorie) intake. Calorie excesses and overconsumption of certain nutrients/food components pose major health problems. As many as 20-30% of all Americans may be described as clinically obese. Some 50-60% of all Americans may be overweight. Attitudinally, up to 70-80% may feel they are overweight. Factors such as these indicate substantial reductions in the quantity of foods and calories consumed are coming. Beyond the year 2000, I forecast daily caloric intake will drop to the 3,000-3,100 calorie range. Such trends auger well for the substantially increased use of calorie-controlled (non-caloric, low-caloric, high-intensity) sweeteners.

GROWING LEISURE TIME CONTRIBUTES TO REDUCED CALORIE NEEDS. Back in Colonial times Americans worked harder and longer and leisure occupied only 23% of lifetime activity. Currently Americans devote 41% of lifetime activity in pursuit of leisure. Europeans may be further along and constitute the bellwethers for understanding how people utilize new-won leisure time. Workweeks in the U.S. currently average about 40 hours duration -- those in Europe already average as few as 31 hours. Mandatory vacation time compelled by statute in Europe runs as high as 5 weeks in duration - there is no similar directive in the U.S. More and more holidays are created/celebrated by statutory fiat. More time off from work for all manner of reasons steadily diminishes the time actually spent on the job. Physical demands of work wane. By far and away, television watching is America's most popular leisure time pursuit. Average household time spent daily watching television increased from 4 hours-35 minutes in 1950 to 7 hours-2 minutes in 1983. Sedentary activities such as television watching, reading, writing, office work and the like require an energy expenditure of only 80-100 calories per hour. No wonder waistlines are bulging. Less, not more food is a hallmark of these times. Urgings to reduce caloric intake from sugars enormously enhances growth potentials for calorie-controlled sweeteners. Substantially increased use of calorie-controlled sweeteners is a certainty.

HEALTH CONCERNS REGARDING SWEETENERS. Beyond the risk posed by excessive caloric intake, are storms of controversy implicating excessive consumption of sucrose with heart disease, diabetes, dental caries and other serious diseases gripping modern day societies. A contraeity of opinion hangs over most of these issues. Definitive scientific consensus is lacking. There is, however, a somewhat preponderant weight of authority linking sugars with dental caries. Multi-factorial risks associated with the etiology of dental caries, however, still tends to confound 100% certain answers. Calories, caries, and cancer -- the three C's -- sum up basic concerns swirling around synthetic sweeteners. Health and safety considerations figure prominently among factors motivating consumer switch-over to calorie controlled sweeteners. Better understanding of the role diet plays in minimizing health risks -- preventative health measures -- will foster the shift. Sugar consumption has been adversely implicated with poor dietary habits for centuries. It will continue to be a subject of such contention.

MACRO-NUTRITION GOALS CALL FOR REDUCED CALORIE AND SUGAR CONSUMPTION. Health related admonitions contained in macro-nutrition goal statements implore

consumers to reduce overconsumption. Brunt of the attack is levelled against food products high in calories and devoid of other redeeming nutritional value. Sugar has been singled out as one of the prime candidates for reduced intake. Macro-nutrition goals established by a number of post-industrial affluent nations recommend reducing the proportion of calories in the diet contributed by added sugars. Recommendations in The Netherlands, Norway, Canada, and England specified no concrete objective. Sweden and the U.S set a quantitative goal, specifying a reduction of added sugars to 10% of total calorie intake. At the time when the goals were adopted added sugar consumption in many of these nations (caloric sweeteners only) were estimated at 11-17% of total calorie consumption.

SELF-CORRECTION OF DIETARY EXCESSES THROUGH TECHNOLOGY. Initially I had believed that technology would "self-adjust" dietary excesses. I had assumed that low calorie foods (along with foods reduced in fats, salt, sugars and so forth) would effectively resolve the problems associated with dietary excesses. I remain convinced on that eventuality -- long term.

LOW CALORIE SWEETENERS SUPPLEMENT NOT SUPPLANT TOTAL SWEETENER USE. So far as sweeteners were concerned I had assumed that increasing use of low calorie sweeteners would, to a significant degree, displace caloric sweeteners, thereby largely resolving any problems thought to be associated with excessive sugar consumption. Preliminary review of consumption trends in a number of countries that adopted macro-nutrition goals indicates -- to my very great suprise -- that human behavior has ignored the behests and continues to run counter to recommended macro-nutrition goals. In the countries surveyed caloric intake continues to climb along with the consumption of sweeteners! This is an amazing state of affairs. This matter certainly warrants careful appraisal, particularly since over-consumption of calories and dealing with obesity probably represents the number one opportunity to reduce premature death and to improve the quality of life.

The assumption that increased availability and use of calorie-controlled sweeteners would supplant not supplement caloric sweetener intake had some foundation in the experiences with use during both World War I & II. During both World Wars, when cane and beet sugar imports were thwarted, saccharin took up the slack. German saccharin production which stood at 30,000 kg. in 1894, soared ten-fold to 300,000 kg. by 1922, WWI (and postwar adjustments) having prompted the increase. Similarly, during WW II German saccharin production rose from 96,000 kg. in 1934 to 500,000 kg. in 1944. Whereas beet sugar had been Napoleon's answer to short sweetener supplies, saccharin did the same for Hitler. In the U.S. wartime production trends were similar. Saccharin production totalling 26,000 tons in 1910 doubled to 60,000 tons in 1918 during the height of WW I (1917-1918). A similar production run-up occurred during WW II (1941-1945), U.S. saccharin production rising from 81,000 tons in 1940 to 335,000 tons in 1946. During these war years caloric sugar consumption substantially declined. The point to consider here is that saccharin use actually did displace or supplant cane/beet sugar consumption. Based on this evidence, it was not unreasonable to assume that widespread availability of calorie-controlled sweeteners would supplant use of caloric sweeteners. Apparently, this is not so! Suggestions that calorie-controlled sweeteners may not

supplant so much as they may supplement consumption of other caloric sweeteners has some profound implications. A major appeal of non-caloric and low caloric sweeteners is the general belief that they are useful in weight reduction and weight maintenance. Reports in the literature cast doubts upon the value of or at least the effectiveness of calorie-controlled sweetener use in weight loss dietary regimes. Clinical-type weight-reduction studies, including trials in which calorie-controlled sweeteners were introduced, unbeknownst to test subjects, into their diets failed to show weight reduction of the kind, magnitude or duration anticipated. Such surveys suggest that weight loss claims (construed as an extension of labeling claims and regulated as such), may require much more definitive study. Without such proofs, weight control promotional claims could run afoul of misbranding and adulteration provisions and penalties of existing laws.

REGULATORY MEASURES TO MODERATE SWEETENER CONSUMPTION. Eight years ago I surveyed the roiling mish-mash of over 160 different legislative/statutory/regulatory measures which had been proposed to discourage sweetener consumption. The urgency of these measures and legislative attitudes have waned. Although currently in abeyance, I do not expect this doldrum to last. Eventually, I believe, combinations of these policies -- some already implemented by law or voluntary undertaking -- will be revived. From this welter of approaches will emerge a few principles that will be applied to encourage moderation of sweetener consumption.

"MULTIPLE SWEETENER" CONCEPT: CONTEMPORARY REGULATORY MODEL FOR THE WORLD. Prospects for regulatory approval of a growing number of alternative sweeteners are excellent. England serves as the harbinger or prototype other nations are likely to follow. England consciously reviewed the total range of commercially available sweeteners in one fell-swoop. This contrasts markedly with approval processes in other countries which have randomly reviewed alternative sweeteners one-by-one as they were presented. Rationale underlaying the English model involves consciously surveying the full array of available sweeteners, determining probable use of each, all the while with the intent to authorize a number of different sweeteners so as to spread any possible risks that might result and be aggravated by over-reliance upon any single entity. Considering that many hundreds, perhaps one thousand different sweeteners potentially may be available, and that only a few score are approved for human use, the total number of potential alternative sweeteners likely to be approved for human use looms very large indeed! My forecast anticipates a growing constellation of calorie-controlled sweeteners soon will be available to consumers.

THE 1986 OUTLOOK FOR FOOD PRICES AND CONSUMPTION

OUTLOOK '86

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The rise in retail food prices in 1985 has been small. When data are available for all of 1985, the Consumer Price Index (CPI) for food is expected to average slightly more than 2 percent above last year. This increase will be one of the smallest in 18 years. Prices of food purchased in grocery stores are about 1 percent above 1984 while food sold in restaurants and fast food establishments are up 4 percent. The small rise in food prices has helped keep general inflation down this year---good news for consumers.

Increases in food prices have been moderate to low for the past several years. Farm prices, costs of processing and distributing foods, and consumer demand are the major factors influencing retail prices. Large supplies of many farm foods have kept farm prices low. The slowdown in the general inflation rate has held down increases in costs of processing and distributing foods. Slow growth in real disposable personal income kept consumer demand for food weak until 1984 when real disposable personal income rose 5.8 percent, adding strength to consumer demand which has carried into this year.

Large supplies of farm foods at favorable retail prices have led to increased food consumption in the last three years. Annual changes in food consumption are more dependent on supply and price changes than on changes in demand. Todays discussion will focus more on the short term supply related changes.

A discussion of some individual categories of the CPI for food and factors which have effected supplies can help to explain price and consumption changes this year and set the stage for our 1986 forecast for food.

Meats

Total red meat production has been record high this year because of large beef supplies. Beef supplies were augmented by higher than normal slaughter weights of cattle. Producers held animals from market in hopes of stronger market prices. With weather conditons ideal for good weight gains last spring, cattle gained more weight than expected, causing a buildup of heavy cattle in feed lots. Market prices for the heavier animals were discounted because of the added labor and handling costs necessary for processing. As a result, cattle prices remained depressed for most of 1985. Supplies of beef were large, and retail prices edged down each month from January through September. With large beef supplies at lower prices, pork prices remained about level, even though pork supplies were slightly below 1984. The heavy cattle were not worked through the system until this fall, at which time

cattle prices began to rise. Cattle and hog prices are likely to continue to strengthen into next year, pushing the farm value of meats up and putting pressure on retail prices. We now expect retail meat prices to rise 3 to 5 percent in 1986. Meats account for 15.7 percent of the food CPI and therefore, have a strong influence on the total food CPI. Smaller supplies of red meats in 1986 will reduce meat consumption 5 to 6 percent below 1985.

Poultry

Poultry production in 1984 was cut due to high feed prices and poor producer returns. Because of smaller supplies, retail prices increased 10.6 percent that year. As feed prices fell late last year, and producer returns seemed favorable, poultry production increased. In 1985, poultry production has been up about 5 percent from 1984, adding significantly to total meat supplies. Even with larger supplies, retail prices for poultry have decreased only about 1 percent this year after the double digit increase last year, suggesting strong consumer demand. In 1986, poultry production is expected to increase again. Large poultry supplies next year will tend to push retail prices down. However, higher prices for red meats will likely cause consumers to shift some demand to the relatively lower priced poultry, keeping retail poultry prices about level with 1985. Per capita poultry consumption has increased about 3 percent this year, and will likely increase 3 to 4 percent next year.

Eggs

Eggs have played a significant role in the decrease in farm value of food this year. The farm value of eggs in 1985 is expected to fall more than 30 percent from the high levels of 1984 when supply disruptions caused by the avian flu pushed farm prices and retail prices to record highs. In 1985, retail prices for eggs will average about 18.5 percent below 1984. Although eggs account for only 1.3 percent of the CPI for food, such drastic changes can have a strong effect on the total. In 1986, retail prices of eggs are expected to rise 3 to 5 percent as producers decrease output in hopes of more favorable returns.

Dairy Products

Prices of dairy products have been fairly stable for the past few years because the reduction in the milk price support program. While prices for dairy products are forecast to rise 1.9 percent this year over 1984, most of the increase has been for the more highly processed products, particularly cheese and ice cream. The CPI for dairy products is currently forecast to remain unchanged in 1986. Similarly, per capita consumption of dairy products is likey to rise less than one percent in both 1985 and 1986.

Fats and Oils

Soybeans have a large weight in determining the farm value of fats and oils since soybean oil is the primary oil used in the production of vegetable oil products. However, the relationship between soybeans and the retail price of vegetable oils is complex. Soybean oil is a joint product with soybean meal, which is primarily used for animal feed. Meal

accounts for about 80 percent of the soybean crush. In 1985, weak demand and low prices for animal feed have held down soybean prices, despite increased demand for soybean oil. Consequently, retail prices for fats and oils have risen 3 percent this year, despite a drop in soybean prices.

Next year, we expect retail prices of fats and oils to rise again by 2 to 4 percent, and consumption to fall by 1 to 2 percent. Smaller supplies of animal fats in 1986 will increase demand for vegetable oils at the frying and baking industry level, bidding up prices for oil used in retail products.

Fresh Fruits

Supplies of fresh fruits have been small for several years because of weather damage to fruit trees. Spring floods in 1983 damaged California fruit trees causing smaller yields in the 83/84 season and again in 84/85 season. The 1983 Christmas freeze destroyed the Texas citrus industry, and production there will not return for some years to come. Florida citrus production was also hurt by the same freeze but has since recoverred. Late spring frosts this year damaged peach and apple crops as well as some other deciduous fruits. As a result of the smaller supplies, prices increased about 11 percent last year and nearly 11 percent this year. Damage to fruit trees takes time to heal and supplies of some fruits are likely to be small again next year, causing higher retail prices and little or no change in consumption from 1985 levels.

Fresh Vegetables

Fresh vegetable prices this year will average a little over 5 percent below last year. Supplies of fresh vegetables have been stronger this year than 1984, when freeze damage destroyed many fresh winter vegetables in Florida and Texas. Although there was a January freeze this year in Florida, it came later in January after many vegetables had already been harvested. Also, Mexican imports of fresh vegetables were heavy through the first quarter of this year, supplementing any shortages in domestic supplies. Large potato supplies this fall along with low prices have also tended to hold down average fresh vegetable prices this year. Large potato supplies will follow into next year, and barring a freeze, supplies of other fresh vegetables will be plentiful, holding prices 3 to 5 percent below 1985. Consumption of domestically produced vegetables this year is only slightly above last year, but in 1986, vegetable consumption is expected to increase 1 to 2 percent.

Cereals and Bakery Products

Since cereal and bakery products are more highly processed than other categories of foods, their retail prices are more responsive to changes in marketing costs. Retail prices for cereal and bakery products have increased about 3.5 percent this year and are expected to increase 2 to 4 percent in 1986. Consumption of wheat flour, pasta, and corn meal products has risen in the last few years and we expect further increases of 1 to 2 percent in both 1985 and 1986. This increase can be attributed to increased demand for ethnic foods. Recommendations by the National Cancer Institute and other groups to increase consumption of fibre and grain products may also be a factor influencing consumption of these products.

Table 1--Changes in Food Price Indicators, 1983 through 1986

	Relative Importance	1983	1984	1985	1986 Forecast
Consumer Prices Indexes:			Percent		
All food	100.0	2.1	3.8	2.2	2 - 4
Food away from home	33.0	4.4	4.2	3.9	3 - 5
Food at home	67.0	1.1	3.7	1.1	1 - 3
Meat, poultry, and fish	20.1	-0.7	1.6	-0.6	2 - 4
Meats	15.7	-1.1	0.3	-1.3	3 - 5
Beef and veal	8.5	-1.5	1.2	-2.2	3 - 5
Pork	4.5	-0.7	-1.3	-0.1	3 - 5
Poultry	2.2	1.2	10.6	-1.2	-2 - 0
Fish and seafood	2.2	1.2	3.2	4.6	2 - 4
Eggs	1.3	4.7	11.7	-18.5	3 - 5
Dairy products	8.8	1.2	1.3	1.9	-2 - 0
Fats and oils	1.9	1.3	9.5	3.0	2 - 4
Fruits and vegetables	10.1	0.3	8.6	2.7	1 - 3
Sugar and sweets	2.6	1.9	3.9	2.7	2 - 4
Cereals and bakery products	9.1	3.2	4.4	5.5	2 - 4
Nonalcoholic beverages	7.4	1.9	2.5	2.0	2 - 4

Table 2---Changes in Per Capita Consumption of Selected Food Groups

	1983	1984	1985	1986 Forecast
		Percent		
Total Food	2	1	1	-1 - 2
Animal Products	3	1	1	-2 - 3
Meat	3	0	0	-5 - 6
Poultry	2	2	3	3 - 4
Fish	6	4	1	1 - 2
Dairy Products	2	2	1	0 - 1
Crop Products	1	1	1	-1 - 0
Fats and Oils	3	-2	2	-1 - 2
Vegetables	-2	3	1	1 - 2
Fruit	4	1	0	0 - 0
Potatoes	4	0	2	0 - 1
Cereals	-4	0	2	0 - 1

Food Prices and Consumption 1985 and 1986

The consumer price index (CPI) for food in 1985 is expected to rise 2.2 percent above 1984. In 1986, we are forecasting a 2 to 4 percent rise. The slow growth in the general economy this year is likely to continue through 1986. The unemployment rate of slightly over 7 percent this year is expected to remain about the same in 1986. The general inflation rate is expected to remain near 4 percent in 1986 as it has for the past 2 years. With slow economic growth and no change in unemployment, real disposable personal income is expected to increase in 1986 about the same as the increase this year, well below the 5.8 percent increase from 1983 to 1984. As a result, the rate of growth in consumer demand is expected to remain slow through next year. Therefore, we expect little strength in food prices from influences in the general economy.

A reduction of supplies, particularly of red meats, will be the major influence on food prices and consumption in 1986. This is a reversal of 1985 conditions when supplies of some commodities were record large. Smaller food supplies next year will strengthen farm prices causing an increase of 2 to 4 percent in the farm value of food. Food consumption is expected to decrease 1 to 2 percent because of smaller supplies. Also, smaller supplies will mean stronger retail prices for many farm foods.

The U.S. Department of Agriculture's market basket statistics are often used to look at the underlying causes of food price changes. The retail cost of the market basket represents domestically produced farm foods sold in grocery stores. The market basket consists of two parts -- the farm value and the farm-to-retail price spread. The farm value of food is that portion of the consumer dollar that goes to farmers and accounts for about one-third of the retail cost. The farm-to-retail price spread is the difference between farm value and retail cost and represents all of the costs incurred in transforming raw farm products into finished foods and making them available to consumers. The market basket does not include fish and imported foods.

The farm value of food is expected to fall nearly 7 percent this year from 1984, the second decrease in the last three years. Large supplies of many commodities, particularly cattle, hogs, and poultry have depressed producer prices. Also, farm prices for eggs and fresh vegetables have declined as supplies recovered from supply scarcities in 1984. The farm value of fats and oils fell this year, because of lower soybean prices. Fresh and processed fruits are the only categories for which the farm value has increased this year, mainly because of smaller fruit supplies. Because of the lower farm value of food, the farmers share of the consumer dollar will drop to 32 cents from 34 cents in 1984.

In 1986, we expect the farm value of food to rise 2 to 4 percent above this year. The primary cause of the rise in farm value will be to lower supplies and associated higher prices for cattle and hogs. The farm values of most other food categories are expected to fall slightly. Barring a freeze in the fresh winter vegetable growing areas, the farm value of fresh vegetables will decrease nearly 6 percent because of large supplies and low prices for potatoes.

The farm-to-retail price spread has increased more than 5 percent in 1985. This is the largest increase in 4 years, and reflects lower farm prices for many foods while retail prices rose slightly. A slight rise in the cost of marketing food accounts for a portion of the rise in the farm-to-retail price spread. However, some of the rise in the spread can be attributed to strong consumer demand which carried over from 1984 when real disposable personal income rose 5.8 percent. The wider spread suggests some recovery in profits to the food industry following the recession of the early 1980's when some food processors were suffering severe losses. In 1986, we expect the food industry to have fully recovered from the recession and the farm-to-retail price spread will rise at about the same rate as the general rate of inflation, which has typically been the case.

Table 3--Market Basket Statistics

Category	Relative weight	Average annual changes from previous year					
		1981	1982	1983	1984	1985p	1986f
		Percent					
Retail Cost	100	7.7	3.6	0.9	3.9	1.2	1 to 3
Farm Value	33	2.8	1.1	-2.2	5.4	-7.0	2 to 4
Farm-to-retail price spread	67	10.5	5.0	2.3	3.2	5.2	1 to 3

p=preliminary f= forecast

The food marketing cost index (FMCI) measures changes in prices of inputs to the food processing and distribution system. This index has risen very little this year and is not likely to rise significantly next year. Labor costs, which account for about half of all food marketing costs, have averaged only 0.2 percent higher this year than last. The small rise in labor costs this year is the result of lower wage rates for some new employees and only small cost of living increases for those employees under union contracts. Cost of living increases are typically calculated using changes in the general rate of inflation which has slowed considerably in the past few years. Because of a low rate of inflation in 1986, we expect labor costs in the food industry to continue to increase at a low rate.

Packaging costs are the second largest component of the FMCI, accounting for about 15 percent of the total. Packaging costs have risen less than 3 percent this year compared to 1984. Slightly higher prices for cans, glass containers, and paper board products were partially offset by lower prices for plastic packaging materials. Food packaging costs are expected to rise 3 to 4 percent in 1986. Demand for packaging materials carries beyond the food industry and expected growth in the general economy, although modest, suggests some bidding up of prices for packaging materials.

Energy costs, accounting for about 9 percent of the FMCI, have decreased in 1985 by about 3 percent. The decrease reflects 10 percent lower prices for petroleum products which were partially offset by higher prices for gas and electricity. Next year, energy costs are expected to rise little if any as crude oil prices and natural gas prices are not expected to rise. Any increase in energy costs to the food industry next year will likely be from elctricty costs which are expected to continue the current upward trend.

Transportation costs account for about 11 percent of the FMCI and have increased about 1 percent this year above 1984. The small increase is due to a small increase in rail rates and a 1 cent per mile tax imposed on trucks weighing more than 55,000 pounds. Other costs of operating trucks have not changed from last year. Transportation costs for the food industry are not expected to rise significantly in 1986. Demand for transportation services is expected to remain near current levels and costs for fuel are not likely to rise next year, thus adding little pressure to higher transportation costs.

Table 4--Major Food Marketing Costs

Category	Average annual change from previous year			
	1983	1984	1985p	1986f
	Percent			
Food Marketing Costs	3	4	1	1 to 2
Labor	4	3	0	1 to 2
Packaging	2	10	3	3 to 4
Fuel and Power	0	1	-3	0 to 1
Transportation	1	4	1	0 to 1

p=preliminary f=forecast

In conclusion, food price increases have been small this year because of large supplies of many farm foods and food consumption will again increase. However, we expect total food supplies to decline from 1985 levels, particularly supplies of red meat products, causing total food consumption to decline 1 to 2 percent and also causing upward pressure on retail prices. Retail prices in 1986 are forecast to rise 2 to 4 percent above 1985.

PROSPECTIVE DEVELOPMENTS IN FOOD MARKETING

OUTLOOK '86

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Americans will allocate about 15 percent of their disposable personal income to food in 1985, the lowest percentage in U.S. history, about 4 percent will go to purchase raw agricultural products used in the food supply. The other 11 percent, over $300 billion dollars, to pay for processing, transporting, storing, distribution, retailing, and servicing of the raw food supply. This intricate and interacting network of firms that market the food supply from the farm gate to the final consumer makeup the food marketing system.

In total, there are over a million establishments within this system. These include over 250,000 retailers, about 700,000 food service establishments about 40,000 wholesalers, and 16,000 food processors. In terms of employment, the system is one of the largest in the U.S., generating approximately 12,000,000 full time equivalent jobs, more than one out of every 10 U.S. workers. These include 3 1/2 million workers in retailing, wholesaling and transportation, about 1 1/2 million in food processing, and 3 1/2 million in eating and drinking places. In addition, the food marketing system generated another 3 1/2 million jobs through other supporting sectors.

The performance of the four market sectors (processing, wholesaling, retailing, and servicing) is important to the overall functioning of the U.S. agricultural, consumer, and non-farm economies. In 1985, about 1,400 pounds of food per person (retail-weight equivalent) will leave American farms, a quantity virtually unchanged over the past quarter century. Over the years, however, major changes changes have occured in the composition and final form of foods consumed.

- Over the past decade less milk and eggs and more chicken, fish, fats, fats, and oils, soft drinks, and vegetables are being consumed.

- Relatively less food is now purchased for at home use and more away from home. At home food expenditures declined from roughly 74 percent of total food expenditures in 1960 to an estimated 58 percent in 1985.

- The form in which these 1,400 pounds of food have been sold has also undergone constant change. For many food products sold in grocery stores, the degree of processing has changed considerably, as shown by relative shifts in what is purchased (breaded chicken fillets rather than raw chicken). At the retail level, the number of products in the nation's supermarkets ranges from 12 to 25 thousand. Each year from four to six thousand new products appear on the nation's grocery shelves.

- o The type of institution in which food is purchased is changing. The bulk of at-home purchases now take place in large supermarket chains; three decades ago, single store firms predominated. Fast food chains currently account for about 45 percent of eating place sales, up from from 10 percent in the 1950's.

The food marketing system is the link between the farmer and the consumer. Shifts in the demand for agricultural products at the consumer level are transmitted by the food marketing system to the farmer. Consumer demand can be affected by changes in the sociodemographic composition of the population (including shifts in regionalization, median age, race, income, educational levels, and family characteristics) and by changes in technology, life styles and health concerns. In addition to providing consumer demand signals to the farmer, the food marketing system can be pivotal in stimulating demand for agricultural products via product innovation, advertising and promotion, and efficient distribution.

As agent for the agricultural economy, the food marketing system must deal with an unpredictable and highly perishable supply of raw materials. Crop output can not be closely controlled because of the vagaries of the weather. In some cases, there are long fixed lags between the decision to produce and actual production. These uncertainties mean that the food marketing system must deal with wide price fluctuations for some commodities, especially fresh fruits and vegetable, and animal products.

The U.S. food marketing system is essentially a slow growth industry compared to the nonfood economy. This can be seen from both income and production. Disposable personal income rose at a yearly compounded growth rate of nearly 5 percent between 1974 and 1984, while food expenditures rose at a yearly rate of less than 3 percent. Consequently, the portion of disposable income allocated to food fell from nearly 17 percent to about 15 percent during the decade. On the production side, the value added by the food marketing system rose at a yearly compound growth rate of 1 percent between 1976 and 1984, while the nonfood marketing system's sector rose 1.6 percent. Consequently the food system's share of total value added fell from about 10 percent to about 9 percent. The system's share of total U.S. employment fell from 10.7 percent to 10.1 percent.

While on the demand side the food system is characterized by slow growth, on the supply side the industry is shaped by several basic economic characteristics. The industry is labor intensive, rather than capital intensive, especially in food service and food retailing. Second, the cost of raw products amounts to about a third of domestically produced foods, so that vacillations in farm prices can impact prices at retail. Third, about a sixth of the U.S. food supply is imported by the U.S. food marketing system. While exports constitute a large portion of U.S. raw agricultural products, the export market accounts for only a small portion of U.S. manufactured food products.

Given its stable but moderate growth and inherent supply characteristics, the food market system benefits by an overall economic climate of stable growth and wage and price stability. During the 1980's, the food system has essentially operated in such a climate, substantially different from the

1970's. Stable or falling farm prices have been the rule rather than the exception. Between 1980 and 1985, the index of prices received by farmers for food commodities, rose only 5 percent. By comparison, farm prices rose nearly 40 percent between 1975 and 1980. Wages account for another third of food marketing system costs. Rapidly rising wages had been prevalent during much of the period from 1970 to 1982. Average hourly earnings rose from $3.35 to $8.49 during that period. Since 1982, increases in wage rates have slowed markedly, and in a number of instances food marketing firms have negotiated wage concessions. Inputs, other than, labor, are of lesser, but significant importance to the industry's costs. Energy and intercity transportation costs account for about a tenth of the industry's cost structure. Oil prices rose over 600 percent between 1972 and 1982, but fell almost a fourth between the early and mid 1980's. Real interest, however, rose considerably during much of the 1980's. The nominal prime rate of interest reached nearly 16 percent in 1982, while the inflation rate was only 6 percent. In contrast, during much of the 1970's the inflation rate was higher than the interest rate. However, because much of the food marketing industry is not highly leveraged, the impact of higher rates has been minimal. Interest costs for instance, accounted for 2 percent of the marketing bill in 1984.

Throughout the 1980's, the U.S. dollar has been very strong against all other currencies. By the late 1970's, gold prices had reached nearly $900 an ounce; by the mid 1980's they had fallen to $350 an ounce. The value of the dollar compared to nearly all currencies rose very sharply. The decline in exchange rates has been beneficial to importers of foreign agricultural products. Exports account for only a small portion of U.S. processed foods. On the foreign investment level, the strengthened dollar has made foreign investment in U.S. food processing, processing, wholesaling, retailing, and food service less attractive.

While producer prices and wages remained relatively stable during the 1980's so did food prices. Between 1980 and 1985, retail food prices rose at an average annual compound rate of 3 percent, compared to 8 percent during the decade of the seventies. Thus, wage and price stability on the cost side has been translated into slow price increases in margins at the retail level.

The 1980's have been characterized by a sharp increase in mergers and acquisitions throughout American industry and food manufacturing, retailing, wholesaling, and food service have all taken part in this process. Because of stable growth and strong financial position, many food marketing firms are a prime target for acquisition.

Much of the same environment prevails in 1985, but several differences exist which can impact on the food system. Farm prices have been declining in 1985. Among meat products, prices received for poultry and eggs will show nearly a 15 percent drop from the levels of 1984. The indexes of prices received by fruit farmers likely will average 6 percent lower, while those for commercial vegetables will be 7 to 10 percent lower than in 1984. Second, the dollar weakened relative to other foreign currencies, thus rising prices of imported food products.

The weakening of the dollar, reflected not only continued trade deficits, but a sharp drop in U.S. interest rates, thus decreasing the demand for U.S. dollars. Interest rates during most of 1985 were considerably below a year earlier, mirroring not only a slowdown in the economy but an accomodating Federal Reserve policy as well.

Economic growth slowed considerably during the first half of 1985. Real GNP growth grew only a third as fast as a year earlier. Real per capita disposable income, which rose nearly 6 percent in 1984, rose at a seasonally adjusted annual rate of slightly above 2 percent during the first three quarters of 1985. Aided in large part by the slowdown in the economy, wages and prices rose at an even lower pace than in 1984 during the first half of 1985. The producer price index averaged a 2 percent increase in 1984, while during the first half of 1985 it averaged less than 1 1/2 percent higher. In 1984, retail food prices advanced less than 4 percent, and the increase in 1985 appears likely to be even less, reflecting both a drop in farm prices and modest increases for nonfarm inputs.

In 1985, significant developments include a wave of mergers as well as divestitures; continued pressure for wage concessions and work rule adjustment and new store formats as firms compete to maintain their share of a slow growth market. The share of the total food dollar allocated to food at home, which dropped from 74 percent in 1960 to 58 percent in 1984, continued its fall in in 1985. But within both food retailing and food service, significant changes continued in terms of formats. In food retailing, while the bulk of all sales continued to be captured by conventinal supermarkets, this format is giving way to increased penetration by warehouse stores, super stores, combination food and drug stores, and convenience stores. In the faster growing food service industry, franchised outlets, chains, and fast food outlets continued to gain at the expense of single unit and full service eating places. In food processing, the share of total shipments by highly processed products constitute an increasing share of total shipments, offset by a declining share for processed fruits and vegetables, milk, and sugar.

The structure of the food marketing industries also continued to change. The number of food processing establishments, , which declined from 42 thousand in 1947 to 21 thousand in 1982, continued falling as many small firms were absorbed into larger firms. The number of food retailing firms increased for the first time in 46 years, but average local concentration in local markets continued to rise. Only in foodservice did the number of establishments continue a longterm increase. Many large wholesalers are integrating forward by acquiring or building retail stores which they operate. The top ten wholesalers operated about 300 grocery stores in 1984.

Amidst all of these changes, the overall pace of food industry acquisitions and mergers increased in the 1980's. The average number of transactions per year was 607, compared to 474 per year between 1975 and 1979. In food processing, slow but steady growth makes many food processing firms inviting targets for acquisition. Intra-industry mergers among food processors allow for more clout in acquiring shelf space in a highly competitive market. Over 40 mergers took place in food retailing in 1984, while over 90 occured in foodservice.

Current U.S. government forecasts of restrained wage and price inflation for the rest of the decade are somewhat tempered by predictions of moderate growth in overall economic activity. Moderate growth in disposable personal income would impact the most on food service which is highly dependent on increases in DPI. The market for food away from home may be expected to continue growing through the 1980's but at a slower pace. The food retailing system, less dependent on changes in DPI is likely to experience inflation-adjustment growth that closely matches the rate of population growth.

Under these economic conditions for the remainder of the decade, a con tinuing experimentation in types of retail and food service formats appears likely. In competing for scarce shelf space in the Nation's supermarkets, continued new product introduction appears likely. Changing store formats and products likely will be accompanied by a continued change in industry structure for food processing, wholesaling, and retailing. Part of this change will come from individual mergers, but forward and backward integration may result as all four segments of the industry attempt to gain control both the source of supply and the final retail market. A long-term decline in employment in retailing, wholesaling, and processing appears likely as attempts are made to hold down costs in this labor-intensive industry.

A SOCIO-DEMOGRAPHIC VIEW OF POSSIBLE CHANGES IN FOOD MARKETING

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Technical analysis of consumer behavior indicates that the relative proportion of food eaten away-from-home has had a positive correlation to increases or decreases in disposable personal income.

While this correlation will probably continue to exist for short term measures, there are many indications that other forces may cause more discretionary spending to be spent on food away-from-home than straight historical projections would indicate.

The generation that will be entering adulthood in the 1990's is quite different from the adults of the 60's and 70's. The adults of the 60's and 70's included the Great Depression in their formative experiences and then entered a wartime economy in their teens. When the men returned from WWII, they married and raised a traditional family.

This family grew with the development of national brand names and frozen food. Later, an entire range of products known as "convenience foods" became important. They also started to eat meals in restaurants. When their household income hit $30,000, they went out to eat at nearly twice the national average. This coincided with reaching an age of 35-44 years old, which was when their children were in their teens. Those families of that age group spent 36% more than the national average on food away-from-home.

The adults from those families are now becoming the first comfortable senior generation. Their durables are paid for, they have high non-income benefits, and have been able to employ more financial planning than any group in history. This means that, while their absolute income is low, a greater part of this income is available for discretionary spending - such as going out to eat "early bird specials" in restaurants. This reflects their somewhat frugal attitudes and ties to their increasing progression toward the acceptance of convenience.

Their children are now starting to replay this adult fugue, but we should expect them to compose it differently. In 1995, the median age of one-third of the nation (the baby boomers) reaches 40 years old. During the occurence of this, the largest single population shift, is the 25-34 year olds earning $10-$20,000 in 1982 becoming 35-44 year olds earning $35,000+ (1982 dollars). This baby boom group also is better educated than their parents with one-half having some college and one-quarter having graduated. Significantly, this group also has many more households where both adults are employed away from home. Very simply, this group that was weaned by Ray Kroc has more money than time. When they get through work they want to relax, not wash dishes.

Generally they are looking for products which:

- o **Ease drudgery and household maintenance**
- o **Enhance their self opinion**
- o **Support mobility**
- o **Allow instant gratification**

and

- o **Add entertainment to their leisure time**

They have not gone through a depression or a wartime economy, and are willing to purchase convenience as an "economic good." The ultimate convenience food, that they became so accustomed to as teenagers, is eating in restaurants.

Simultaneously, the restaurant sector is becoming America's newest professional industry. The chain restaurant concept has introduced the ways of business to away-from-home feeding. This has resulted in sharper competition which was broadly in evidence during the burger wars. Activity of this type is forcing suppliers to become more professional and produce better products. This causes people to eat away from home more often because their needs are being better satisfied by an increasingly responsive restaurateur. Even in fine dining establishments, the haughty maitre d' has generally gone off to join the dodo.

These new restaurants are looking for products which allow them to offer:

- o **A wider variety of menu offerings**
- o **Quicker service**
- o **Better quality**
- o **Better taste**

and generally improve upon food available at home on several dimensions at once.

This means that, as agents for the agricultural economy, manufacturers will be asking for a different product mix; more fish, chicken, spices; different fruits and unique vegetables. It means that different purchasers and different distribution systems will become important and that products may be purchased on different standards of evaluation.

In general, this may tend to destabilize current business patterns and those growers, packers, and canners who are aware of these changes will be most likely to leverage them to their own benefit.

Keep your eye on the day-to-day progression of business; but keep a "weather eye" out for the possibility of major changes in the future.

CONSERVATION OUTLOOK 1986: THE CHANCE OF A LIFETIME
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CONSERVATION OUTLOOK 1986: THE CHANCE OF A LIFETIME

The outlook for soil and water conservation is excellent. The year ahead promises to be a conservationist's dream come true and the chance of a lifetime for lasting progress.

During 1986, we expect to begin the most extensive conservation effort ever undertaken in this country. We expect to begin new programs that will, by the end of this decade, retire about 10 percent of the nation's cropland -- some 40 to 45 million acres of the nation's most highly erodible, and generally least productive, cropland. These programs also will discourage the farming of wetlands and highly erodible lands by linking eligibility for participation in commodity programs to conservation performance more closely than ever before.

I am referring to new opportunities in the conservation title of the 1985 farm bill. Conferees will begin working tomorrow to resolve minor differences between the House and Senate versions. When enacted, this bill will be a landmark. It will treat soil and water conservation as a vital part of the nation's farm economy. It will be a major step toward achieving our goal of improving consistency among all programs in the United States Department of Agriculture.

USDA Conservation Programs

A little background on the evolution of USDA soil and water conservation programs can help us understand the situation we face today.

USDA conservation programs are designed primarily to protect the nation's soil, water, and related resources. However, their effects on commodity production can be significant. For example, programs that encourage conversion of cropland to grass or tree cover have the secondary benefit of reducing acreages planted to certain crops.

USDA commodity programs are designed to lower production levels of certain commodities. The idea is to raise prices received by farmers. From time to time, these programs have included certain minimum conservation requirements on set-aside acres. Conservation was a secondary purpose, but the benefits were sometimes significant.

Traditionally, farm bills have focused largely on commodity programs. Conservation issues have been treated separately. But conservation and

commodity issues are linked today much as they were 50 years ago. Demand is low. Debt is high. Prices received for farm products are low relative to the cost of producing them, but high relative to world market prices.

Economic conditions could force some farmers to aim for short-term gains without the proper attention to wise resource use and conservation. When this happens, problems such as soil erosion intensify. And we consider soil erosion on agricultural land to be the major conservation issue that we face today. Recent research suggests that, for the nation as a whole, the off-farm costs of erosion may be greater than the costs of lost productivity. Estimates vary, but most experts agree than soil erosion costs us several billion dollars every year.

It is not likely that the problem of soil erosion will ever be "solved." Erosion happens when wind and water move across unprotected soil. As long as American farmers are expected to cultivate hundreds of millions of acres in order to feed hundreds of millions of people, soil conservation must be a continuous concern for both farmers and government.

The Department of Agriculture has been involved in soil and water conservation for many years. Our conservation programs have been unquestioned successes. Federal programs, combined with state and local conservation efforts rescued us from the Dust Bowl of the 1930s and helped keep our farms and ranches productive since then. We have been willing to adapt the philosophies and technologies of conservation to the changing philosophies and technologies of agricultural production.

Conservation Proposals for the 1985 Farm Bill

We have once more reached a time for change. The conference committee is studying some of most enlightened conservation proposals ever offered. Taken together, the scope of these measures is unparalleled.

The differences that now exist between the two conservation proposals are not major. We are confident that the final conservation initiatives will be strong. These initiatives have strong support on both sides of the aisle and within the Administration.

Three of the conservation proposals would disqualify farmers from receiving USDA farm program payments if they produced crops on certain lands. These are the sodbuster, swampbuster, and conservation compliance provisions. These proposals would help bring more balance and fairness to our farm programs. They are not attempts to dictate land use or interfere with private property rights. Rather, they are attempts to remove certain government incentives that lead to poor land use. Our philosophy has always been, and will remain, that land use must be a matter that is debated locally, then designed and carried out with fairness and with local support and leadership.

Sodbuster

Sodbuster provisions will apply to farmers who plow highly erodible lands that had not been in crop production during the preceding five years. The only exceptions will be made for those farmers who have and follow a conservation plan approved by the local soil conservation district.

The House bill defines highly erodible lands as those in capability classes IVe and VI through VIII -- about 650 million acres in non-crop uses nationwide, including 30 million acres that have medium to high potential for conversion to cropland. The Senate proposal also includes class IIIe land, which brings the total to 750 million acres, including 70 million with medium to high potential for conversion.

The sodbuster issue is a graphic illustration of contradictory federal policies. The impetus for plowing out grass-covered fragile soils has been provided in part by the government. High profits for wheat in years past led to plowing up thousands of acres of grasslands. The farmer then can usually get a good crop for three years or so. After that, ground moisture has been depleted, wind erosion increases, and yields decline.

After two years, however, the farmer qualifies for a wheat base acreage for price supports the third year. And even during the first two years, he is selling his crop into a market that is price supported to some extent. He also has been able to obtain federal crop insurance to reduce the risks of crop damage or failure.

Some lands just should not be farmed. Once plowed, fragile lands are subject to erosion so severe that the land may not recover for decades. Most sodbusting is done by venture capitalists who knowingly and willingly exploit commodity programs and tax loopholes.

Even when the sodbuster section becomes law, farmers will still be able to plow out their highly erodible lands if they see fit to do so. They just won't get any help from the taxpayers, through USDA, in doing it.

Swampbuster

Swampbuster provisions will apply to farmers who produce crops on wetlands converted to cropland after passage of the farm bill. It will deny participation in commodity programs, storage facility loans, crop insurance, disaster payments, and new Farmers Home Administration loans for the year in which the farmers produce crops of agricultural commodities on newly converted wetlands.

Wetlands provide wildlife habitat, flood control, water quality, ground water recharge, and recreation. A recent study by the Fish and Wildlife Service says that less than 50 percent of the original wetlands in the contiguous 48 states still exist.

Recent losses of wetlands have averaged over 500,000 acres a year. And currently, more than five million acres of wetlands have high or medium potential for conversion to cropland. Some of this loss is the result of conversion to agricultural uses. What results is the production of commodities that add to existing surpluses at the expense of valuable and unique lands.

Conservation Compliance

Conservation compliance will apply to farmers who already cultivate cropland that shouldn't be cropped because it is highly erodible. It differs from the sodbuster in that cropping history would be irrelevant. Producers would have to follow an approved conservation plan to be eligible for farm program benefits, even if the land had been cultivated continuously for years. The various conservation compliance proposals now before the conference committee specify 1988, 1990, or 1995 as the effective date.

Conservation Reserve

The most significant proposal in the farm bill is the conservation reserve. This could be just the shot in the arm we need to help farmers retire some of the poorest cropland in the country. We regard it as nothing less than the chance of our lifetime for significant, lasting soil and water conservation.

There are any number of possibilities for the final shape of the reserve that will become law. Let's assume, for our purposes today, a hypothetical final reserve that looks like this:

-- Every state but Alaska will have eligible land. Nationwide, some 105 million acres of cropland (about one of every four acres of cropland) will be eligible.

-- About 40 to 45 million acres eventually will be enrolled in the reserve. Secretary Block has said that he expects to see the reserve in action 60 days after it becomes law. We hope to get the first retirements under the program in 1986 and to sign the last contract before 1990.

-- Farmers will submit bids on the annual rental payments they will accept. If accepted, they also will receive 50-percent cost shares to help convert the land to permanent grass or trees. Contracts will cover at least 10 years.

-- No individual producer can receive payments, in cash or in surplus commodities, of more than $50,000 a year. And no more than 25 percent of the cropland in any county can be enrolled.

-- We will have a goal of establishing trees on five million acres. At about 500 trees an acre, that amounts to 2½ billion trees holding the

soil in place. We will exceed this goal if possible. We will rely heavily on our friends in state forestry agencies to provide technical assistance to the land owners who want to establish trees.

-- For the life of the contract, producers will not be allowed to use the land for grazing, haying, or harvesting Christmas trees. This will minimize the effects of the reserve on existing cattle, forage, and tree industries.

I emphasize again that the reserve I have just described is hypothetical. It combines features from both the House and Senate proposals. Final action by the conferees could change some of the proposals and therefore the expected results.

The conservation reserve is no replay of the old Soil Bank. Any kind of agricultural land was eligible then. We will impose strict conditions on eligibility for this reserve. The only land that the program will retire is cropland that is highly erodible -- and already excessively eroding. And we have plenty of it.

The croplands we are after in the conservation reserve generally require more costly soil conserving practices than does less erodible land. Land owners who invest in conservation practices on these highly erodible lands often try to recover their costs by cultivating crops that promise higher or quicker returns than hay, pasture, or trees. Erosion is still a problem on cropland not eligible for the reserve, but it can be treated in most places through application of cost-effective conservation measures consistent with a conservation plan.

Eligible lands are generally less productive than the average acre of cropland. Therefore, retirement of a given percentage of land in any commodity will not bring about a corresponding reduction in total production of that commodity.

We do not expect such reductions in production to be reflected in more than very modest increases in prices for wheat, corn, and soybeans by 1990. This expected sluggishness will be the result only partly of the relatively small expected decreases in production. Other factors are the large commodity stocks carried into the period, the anticipated softness in commodity demand, and the high level of annual price-support program activity.

We estimate that the cost of establishing permanent cover on the land will be around $60 to $70 an acre -- of which the federal share will be 50 percent. Federal outlays for the program will be about $8 billion to $10 billion over the first five years, mostly for rental payments. I emphasize that these are gross costs. They will be offset to some degree by reduced payments through the Commodity Credit Corporation.

But the major benefits of the reserve will be environmental. Our hypothetical reserve would provide these benefits, among others, to the environment:

-- Some 650 million tons of erosion on the retired lands will not occur every year the land is not cultivated. That is more than 20 percent of the annual erosion on the land we now classify as cropland, although only 10 percent of the cropland would actually be retired. Much of this erosion reduction will be permanent, as farmers elect to retain permanent cover even after the contracts expire.

-- The amount of sediment reaching streams and other surface water from reserve lands will be reduced annually by 375 million tons every year. That's about 40 percent of total annual sediment loadings from cropland.

-- The amount of pesticides applied annually will be reduced by about 60 million pounds, or more than 15 percent of that applied in 1982.

-- Wildlife habitat quality will improve, particularly where retired areas are near wetlands.

Emerging Issues

Not all of USDA's conservation action centers around the farm bill. Our ongoing conservation programs still represent the foundation of a combined federal, state, and local effort for reducing erosion, mitigating flood damages, and conserving water.

These are our main priorities, but we find that certain other compelling resource needs continue to demand our attention. Now, for example, we find it appropriate to give more attention to water quality and rangeland concerns. These issues will remain near the top of our agenda during the next year.

We have the expertise to advise land owners in installation of soil and water conservation practices, and to train people to plan, install, and maintain best management practices. We even provide cost sharing, too.

In our water quality work, as in all of our programs, we have found that we are most effective when we involve the public from the start, and when we work with individual land owners and state agencies on a voluntary basis.

On rangeland, we are working with other federal departments, state governments, and range user groups to develop comprehensive strategies for optimum use and management of this vast resource. We recently held a highly successful National Range Conference to explore some of the untapped opportunities that rangeland offers ranchers and the nation.

Conclusion

As Secretary Block said yesterday at the opening session, the 1985 farm bill represents a road map for the future that we very much want to have in place this year. It also represents a revolutionary development, especially in the

creation of a conservation reserve. It further represents a significant step toward Secretary Block's quest for sound farm policy.

Soil and water conservation can and must be an integral part of that quest. It can and must be an integral part of our efforts toward a more aggressive international agricultural trade policy. And it can and must be a part of our efforts toward reducing the crippling federal deficit, because of the many economic and environmental costs that we can avoid through proper resource care.

I am truly excited and optimistic about the outlook for greater soil and water conservation achievement. There has never been a better time to be a conservationist.

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CONSERVATION IN THE 1985 FARM BILL: ANOTHER PERSPECTIVE

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Although the 1985 farm bill is not finalized at this writing, the implications for conservation are broad and deep if preliminary House and Senate proposals are approved. Indeed, one could argue that taken together the proposed changes in conservation policy, primarily erosion control, represent the largest single change since the inception of federal conservation programs. I will argue that if all of the proposals are implemented, they may signal an important shift in the nature of conservation policy relating to agricultural production. Moreover, they have important spillover effects on agricultural supply control programs.

This paper is divided into three sections. First, the major conservation elements which appear likely to be included in the 1985 farm bill are briefly described. Then, the likely impacts of each element are discussed while noting its potential advantages and problems. In closing, I will try to draw together the individual threads from this year's legislation to portray implications for future conservation and agricultural policies.

Conservation Elements in the 1985 Farm Bill

Four major conservation proposals for the next farm legislation are discussed below.

1. program ineligibility for production on highly erodible land or converted wetland
2. multi-year set-asides
3. conservation reserve
4. conservation easements

Several other items related to conservation are included in the House and Senate (committee) bills but are not discussed here, including (a) completion of soil surveys, (b) technical assistance for water resource development, (c) promotion of dry land farming (Senate only), and (d) extension of the Resource Conservation Act appraisals to 1995 and 2005.

Program Ineligibility

The purpose of this provision is to remove Federal program incentives to crop highly erodible cropland and converted wetland. This proposal therefore encompasses the "sodbuster" and "swampbuster" penalties applying to conversion of highly erodible land or wetlands to crop production as well as the "conservation (cross) compliance" penalties associated with highly erodible cropland already in production.

Highly erodible land is generally defined to include Soil Conservation Service (SCS) land capability classes IVe, VI, VII and VIII or land, if cropped, that would produce an excessive annual rate of erosion as determined by the universal soil loss equation and wind erosion equation. However, the Senate definition also includes class IIIe which holds almost 80 million acres of cropland according to National Resources Inventory data. Wetlands are generally defined as land that has a predominance of hydric soils which are sufficiently wet under undrained conditions to support the growth and regeneration of hydrophytic vegetation. The key distinction is that the wetland must be unsuitable for agricultural production in its natural state.

Language in the House and Senate versions specifies that a person (landowner or operator) would risk losing all of the following for their entire operation during the crop year: (a) price supports or payments under the Agricultural Act of 1949, the Commodity Credit Corporation (CCC) Charter Act or any other act, (b) a CCC farm storage facility loan, (c) Federal crop insurance, (d) disaster payments, and (e) any Farmers Home Administration loan contributing to excessive erosion on the fragile land or conversion of wetlands. The possible loan penalties only apply to loans made after enactment of the 1985 farm bill. These five categories then become the potential penalties or annual cost if highly erodible cropland or converted wetland is cropped.

Several exemptions qualify when and if these penalties apply. First, highly erodible land already in crop production which was part of a farmer's 1981-1985 supply control program acreage would not suffer the penalties until 1988 (Senate) or 1990 (House) or until two years after the land has been mapped by SCS. Second, the penalties are not invoked by crops planted before or planted during any crop year before the 1985 farm bill. Third, wetland converted to crop production before enactment is exempted. Finally, crop production on highly erodible or converted wetland will not trigger ineligibility if operated according to an approved conservation system or wetland conservation plan.

Multi-Year Set-Asides

Although not under a resource conservation title, this House provision allows the Secretary to enter into multi-year set-aside contracts (not to extend beyond 1990) to accomplish conservation goals. Specifically, participating producers are required to establish vegetative cover with federal cost sharing to provide soil protection, water quality enhancement, wildlife production and natural beauty. Grazing of the set-aside land is prohibited except in areas of major disaster. Administrative procedures for the program are left to the Secretary's discretion.

Conservation Reserve

In both the Senate and House bills, a conservation reserve (CR) is authorized. This approach closely resembles the Soil Bank programs of the 1950s and 1960s, with one exception noted below. Under the CR proposal,

the Secretary is empowered to enter into contracts not shorter than 10 years to convert highly erodible cropland to less intensive uses. Highly erodible lands include land capability classes IVe, VI, VII and VIII or those lands that have an excessive erosion rate as determined by factors in the universal soil loss or wind erosion equations. The Secretary can establish priority criteria for enrolling cropland including on-site and off-site erosion damages, and even consider lands which are not highly erodible but which pose an off-farm environmental threat or if continued in production risk productivity degradation from soil salinity.

House language defines a 25 million acre program ($20 million cash, $5 million payment in kind (PIK)) with enrollment from October 1, 1985 to September 30, 1990 while comparable Senate provisions are 30 million acres over the 1986-1990 crop years. Participating owners and operators must agree to a plan approved by the local conservation district, an appropriate State forestry agency or by the Secretary. Commercial use of forage or trees is permitted in the Senate bill if approved in the conservation reserve contract by the Secretary, but expressly disallowed by the House bill unless an emergency occurs (except for pulpwood and fencepost harvests). In both versions, the Secretary is given the authority to terminate any or all CR contracts by mutual agreement with the owner or operator if the termination is in the public interest. Such an "escape clause" would evidently apply if an unanticipated production shortfall occurs in the world agricultural economy.

The Federal government provides annual land rental payments and some cost sharing for the establishment of permanent vegetative cover (forage or trees) in exchange for the landowner's voluntary agreement to not plant row crops or small grains. The annual rental payments can be established by competitive bids or other procedures. The Secretary is allowed to use the CCC to carry out this subtitle with varying degrees of restrictions in both House and Senate versions.

At the end of the contract period, landowners who participate in Federal commodity programs will lose their program benefits if they convert the CR land back into crop production (i.e., a sodbusting penalty applies). This penalty was not present after the Soil Bank program expired and is designed to promote the permanent conversion of highly erodible cropland to less intensive uses. A permanent reduction in the landowner's program base acreage is specified by Senate language while the House version allows a voluntary permanent reduction or a decrease based on the ratio of the farm's base to total cropland acreage. An annual limit on CR payments of $50,000 per person would be established (not including cost sharing). Finally, the House language would not allow more than 25 percent of a county's cropland in the CR. Numerous other details (e.g., penalties for violation) are spelled out in the legislation or left to the Secretary's discretion.

Conservation Easements

A conservation easement program is established in the credit titles of the House and Senate bills. Its intent is to aid Farmers Home Administration

(FmHA) borrowers who hold highly erodible land, wetland or other marginal cropland that can potentially provide a wide array of conservation benefits but whose owners cannot repay their loans in a timely manner. Owners can grant 50 year conservation easements on their eligible land in exchange for a write-down of their FmHA loan in the ratio of the number of eligible acres to total acres securing the loan. To be eligible the land must have been row cropped in each of the past 3 years and be in land class IVe or higher to qualify as highly erodible. The easements are to be acquired to promote conservation, recreational and wildlife purposes for a term of not less than 50 years. Any part of the loan cancellation is not subject to federal income taxes. Sources of funds to reimburse the FmHA loan losses are not specified.

Potential Impacts, Advantages and Problems of Conservation Elements

Program Ineligibility

Perhaps the most far reaching conservation measure is the potential loss of federal program benefits if highly erodible cropland or wetland is not operated according to specified conservation standards. Far reaching because, in addition to the presumed conservation enhancement, implementation of the "sodbuster," "swampbuster," and "conservation compliance" provisions will have direct and indirect effects on supply control and participation in the other programs whose benefits are at risk. This conclusion should not be surprising since the expressed objective of these proposals has been to improve the consistency (i.e., reduce conflicts) between resource conservation efforts and other federal agricultural programs.

The primary intent of the three provisions is to remove federal program incentives (i.e., subsidies) for the use of highly erodible land or wetlands for crop production. By definition, other cropland will remain eligible to receive those subsidies. The reason that highly erodible land and wetland are singled out is because their conversion or use causes social costs in the form of increased erosion damages or lost wetland benefits (e.g., wildlife habitat, groundwater recharge). Thus an important decision in the implementation of these programs is to identify those lands that do in fact promise significant erosion control and wetland benefits. Heimlich argues that the use of the land capability classes mentioned as one set of eligibility criteria in the House and Senate bills lacks precision in identifying highly erodible land. Similarly, the wetland definition in the bills should be carefully scrutinized to insure that it pinpoints lands with important wetland values.

Consider the potential impacts of the "sodbuster" and "swampbuster" provisions first. By eliminating the eligibility of owners and operators of newly converted, highly erodible land or wetland for price supports, CCC farm storage facility loans, Federal crop insurance, disaster payments and insured or guaranteed loans, the cost of bringing these fragile lands into production will rise for those who expect to receive these program benefits. Thus, we should expect less fragile land to come into crop production when the next increase in crop prices occurs. Obviously this will aid in supply control if the government is trying to temper production response or reduce

stocks. The critical question is how much and that value is impossible to estimate precisely at this point. Heimlich reports that of the approximately 11 million acres converted to cropland during 1979-1981, only 1.9 million acres (about 17%) were both highly erodible and used to grow program crops (i.e., subject to farm program benefits). I am not aware of similar information for wetlands with crop potential but suspect that the amount of total acreage affected will be smaller than for the sodbuster. Thus, these programs should have a relatively small aggregate impact on crop production and therefore supply control efforts.

"Conservation compliance" (CC) may affect many more acres than the "sodbuster" and "swampbuster" penalties. If highly erodible cropland is defined to include class IIIe or a similar definition based on universal soil loss and wind erosion equation factors, then over 50 million acres currently under cultivation are eligible. The percentage of those acres planted to crops receiving federal program benefits is the important variable for that percentage determines the extent of potential CC coverage.

The ultimate CC impact on conservation and supply control depends upon many factors. Under the mechanism outlined in the bills, landowners and operators of highly erodible cropland will weigh the loss of their annual federal program benefits (for their entire operation) versus their annual cost of meeting the conservation standard to be specified by the Secretary. Obviously if they do not expect to participate in any of the federal programs specified, there is no incentive to comply and therefore neither supply control nor conservation will be directly affected. If they do receive some or all of the program benefits, their annual compliance will depend upon whether the loss in those expected benefits outweighs the cost of complying with the standard. Some have argued that the greatest incentive to participate may be for those who on average operate the most productive of the highly erodible lands which often cause lower levels of on-site and off-site erosion damages (Ervin, et al.). If this expectation is true, conservation compliance will not target soil erosion control efforts to those lands where the net social benefits to erosion control are greatest.

The compliance cost depends upon the specified conservation standard to be achieved to remain eligible for the program benefits. Ironically, setting the standard high (or the allowable erosion rate low) will result in forcing many of the highly erodible acres out of supply control programs and possible non-attainment of the conservation standard because compliance costs will be high. Operators may in fact practice more erosive crop production, such as soybeans, on the highly erodible lands because no or very low price support benefits are expected for those crops. Or, they may practice crop rotation "gaming" wherein they plant all or a large proportion of their cropland to crops which traditionally receive few or no program benefits in one year and then plant program crops the following year and meet the conservation standard. This presumes, of course, that this shift in crop rotations is economically feasible and desirable considering the farm enterprise mix, program benefits and conservation standard.

One advantage of the three program ineligibility provisions relates to the other conservation elements in the farm bill versions. By removing federal subsidies for cropping highly erodible land, the "sodbuster," "swampbuster" and CC provisions will likely reduce the cost and/or increase the rate of participation for the other three conservation elements which are designed to remove such land from crop production. For those operators who farm or plan to convert highly erodible land or wetland and who also participate in federal agricultural programs, the expected net returns to crop production will decrease. Thus, they should be willing to ask a lower price (in terms of foregone net returns) to remove or keep that land from intensive crop production.

In summary, the following potential advantages and problems of the program ineligibility provisions should be highlighted.

Advantages

1. Reduces inconsistency between conservation and other agricultural programs.

2. Removes subsidies to crop production on highly erodible land or wetland (i.e., targets conservation effort).

3. Government cost of conservation and supply control programs should not increase significantly.

Problems

1. Definitions of highly erodible land and wetland must identify those lands with significant conservation/environmental benefits.

2. Greatest incentive to comply may be for lands with lower net social erosion control benefits.

3. Supply control implications are unclear.

Multi-Year Set-Asides

This element, along with the conservation reserve and the conservation easement programs, can be viewed as efforts to remove cropland from production for increasing periods of time. The multi-year set-aside covers only the 1986 through 1990 crop years, the conservation reserve spans 10 years or more and the conservation easement extends to 50 years.

Given the lack of structure and detail spelled out in HR2100 for the multi-year set-aside concept, its impact is difficult to project. The apparent intent is to provide a mechanism whereby participants in the wheat, feed grains, upland cotton and rice programs could contract set aside acreage over the 1986-1990 period (or perhaps a subset of that period) in exchange for cost sharing (unspecified percentage) to establish permanent vegetative cover on the set-aside acres. Such a contract would appear to reduce the

operator's production flexibility compared to meeting annual set-aside requirements. Supply control impacts would appear to be similar to using annual set-asides unless producers commit more acres to the multi-year set-aside than are necessary to meet subsequently announced annual set-aside requirements. Presumably, the multi-year set-asides would provide longer term conservation benefits on specific acres in contrast to uncertain annual set-aside actions. Since annual set-asides also require some form of vegetative cover (or conserving use), the differential impact on conservation from multi-year set-asides does not appear great.

Conservation Reserve (CR)

The primary purpose of the CR is to reduce water and wind erosion damages stemming from highly erodible cropland for a period of 10 years or longer. Dependent upon the size of the CR authorized in the 1985 farm bill, the impacts can be varied and large. The approved House bill authorizes a 25 million acre CR, but that figure may decline when the final bill is approved due to budget constraints.

We are currently conducting research on the aggregate and farm level economic impacts of a conservation reserve with long term cropping restrictions at the University of Missouri (Ervin, et al.). Our preliminary results indicate that a national conservation reserve implemented to enroll cropland subject to high water erosion potential (wind erosion not included) could indeed have a significant impact on erosion control and commodity supply management. Dicks has estimated the following aggregate impacts:

1. soybean, wheat and corn prices will increase by 11, 10 and 2 percent respectively,
2. soil erosion will be halved in the Corn Belt states and will fall by about one third for the entire U.S.,
3. national commodity program payments for corn and wheat would fall by $1.4 billion per year,
4. the cost of permanent cropping restrictions in the Corn Belt would be about $65-$75 per acre per year with commercial forage use ($75-$85 per acre per year if commercial use is not allowed).

These estimates assume that the CR land can be used for forage production and that 25 percent of the highly erodible acreage in each region is annually enrolled over the 1986-1989 crop years. I want to stress that these numbers are preliminary in that we have not been able to analyze effects on the livestock industry and the impacts are being updated with more current information on prices, stocks and other conditions.

To complement and check the aggregate economic analysis we have also analyzed the farm level impacts of selling cropping restrictions in the Corn Belt and surveyed Missouri landowners about their likely bids to enter a CR. The farm level evaluation indicated that owners bids to enter the CR will be very sensitive to their expected crop prices and whether they can harvest or graze forage on the CR acres (Abdelkafi). Also, some landowners can be

expected to bid higher because they will have to sell excess machinery capacity on a possibly depressed market.

Survey findings supported the aggregate and farm level estimates of CR bids for highly erodible Corn Belt cropland. The average Daviess County, Missouri owner-operator would sell a 10 year cropping restriction for approximately $65 per acre per year assuming commercial forage use while the average non-operating owner estimated about $60 per acre per year. Also noteworthy is that owners' bids rose rather substantially as the cropping restriction was extended to 25 years and to a permanent easement. These values are, of course, only applicable to one region and one time period, and undoubtedly would vary across regions according to cropland productivity and changes in crop prices.

One set of impacts has not been addressed. If the conservation reserve changes the structure of agricultural production, then rural community economic structure will likely change. These impacts will likely take the form of different types of economic activity if commercial forage and timber use is allowed on CR land. However, local economic activity will decline in direct relation to the amount of CR land enrolled if no commercial use is allowed. Finally, the sale of cropping restrictions would lower land values on CR acres thus reducing the local property tax base.

From the above analysis and the descriptions in the House and Senate bills to date, several possible advantages and problems of the CR can be identified.

Advantages

1. Voluntary enrollment with open bidding should provide the lowest acquisition cost for the cropping restrictions.

2. Eligibility criteria allow targeting of cropland with highest erosion potential and criteria for acceptability of contract offers (bids) allow discretion to consider the severity of on-site and off-site erosion damages avoided.

3. The 10 year contract period ensures longer term erosion control with the possibility of even longer effectiveness for those CR participants who perceive the "sodbuster" penalties are greater than the benefits of returning CR land to crop production after the contract period.

4. Significant CR enrollment aids conventional acreage limitation measures (e.g., set-aside), thus reducing other government supply control and price support expenditures.

Problems

1. Restriction of commercial forage or timber use on CR land will (a) raise the cost of acquiring cropping restrictions, (b) limit the permanent transition of highly erodible land into less intensive uses and (c)

decrease community economic activity and property tax bases. The Senate CR proposal gives the Secretary the option to allow commercial forage use in some contracts. Extending that option to commercial timber production (including fuelwood harvest) should be considered.

2. The "sodbuster" provision at the end of the contract period will only provide a disincentive to convert the CR land back into crop production for those participating in the federal programs. And that disincentive may not be large enough to avoid a large scale return of the highly erodible land to crop production with the associated erosion damages necessitating additional conservation expenditures in future periods.

3. Since many of the erosion benefits, especially off-site effects, may be specific to local or state areas, local and state governments should be allowed to participate in the funding of the CR in their areas. The state and local governments necessarily would then also participate in CR program administration.

4. Over-enrollment of the CR is possible. From an economic perspective, highly erodible cropland should only enter the CR if the associated present and future conservation benefits and reduced government commodity program inefficiencies outweigh the associated CR costs including land rental payments, cost sharing and increased commodity prices. The CR administrative mechanism does not provide an inherent balancing of program benefits against costs.

Conservation Easements

Impacts of this provision, like the multi-year set-aside, are very difficult to forecast due to the unknown quantity of land eligible and the lack of detail and structure in the legislation. The program's intent is to couple the shift of marginal cropland to various conservation uses with the need to assist FmHA borrowers who are experiencing severe debt stress. I am aware of no data which estimate the coverage such a program might have. Given the additional requirement that eligible land must have been row cropped in each of the 3 years before farm bill enactment, my perception is that a very limited number of acres will qualify.

This conservation easement concept possesses some potential advantages:

1. It extends the period of conservation benefits from marginal cropland to 50 years thereby avoiding its early return to crop production.
2. FmHA borrowers who are unable to meet loan payments would receive some financial assistance in the form of a loan write-down.
3. In conjunction with the CR, it would enhance longer term supply control efforts.
4. Conservation benefits other than erosion control, such as wetland preservation, recreation access, etc., are included in the eligibility criteria.

However, the program's potential disadvantages or weaknesses appear more significant:

1. It singles out FmHA borrowers for special treatment without application to other farmers experiencing severe financial stress.
2. Eligibility requirements will limit the number and type of acres which could yield significant long term conservation benefits.
3. No explicit mechanism is included to rank the acres on which easements will be purchased according to public conservation benefits provided per dollar of government cost. Competitive bids help obtain more economical government expenditures in the CR program.
4. Local and/or state government cooperation in funding easement acquisition where specific local or state conservation benefits accrue is not permitted.

Implications for Conservation and Agricultural Policies

Although the evaluation of individual conservation elements in the 1985 farm bill is necessary and useful, the general implications for conservation and agricultural policies have not been explored. These general implications may help anticipate future conservation policy change.

Batie and Braden, in separate articles, have argued that the rights of agricultural landowners and operators to use farmland are evolving or undergoing change. There have not been dramatic changes in those rights to date. However, a growing number of local, state and national cases signal a trend toward incorporating some form of the social damages caused by erosion and use of wetlands into the farmer's decision making. Program ineligibility, multi-year set-aside, conservation reserve and conservation easement provisions are not designed to accurately incorporate these social damages. Instead they can be viewed as mechanisms to alter the set of incentives under which agricultural landowners and operators use highly erodible land and wetland to achieve greater conservation.

Except for the program ineligibility provisions, each element is voluntary and entails partial or full compensation for the land use adjustments. The presence of compensation does not negate the trend toward trying to alter landowner or operator incentives to use fragile land. For example, even if an eligible landowner chooses not to bid and enroll in the CR, he or she must acknowledge the foregone CR payments (opportunity cost). In essence, the 1985 farm bill conservation provisions are incorporating a consideration of erodible land and wetland impacts that has not existed to this point. Unfortunately, they are not designed with mechanisms that match the change in landowner or operator incentives with the potential erosion or wetland social damages caused by their use of highly erodible land or wetland.

Program ineligibility elements, or the so-called "sodbuster," "swampbuster" and "conservation compliance" provisions may be the most dramatic changes. For these cases, some landowners' and operators' opportunities to receive federal agricultural program benefits have been conditioned upon

meeting a conservation standard without compensation. Some of those owners and operators might consider such actions as a "taking" in that their "rights" to receive program benefits have been restricted without compensation. This view surfaced during the discussion of the national soil and water resources conservation program (U.S. Department of Agriculture). Although I am not a legal expert, that view does not seem to fit the traditional interpretation of property rights and "taking" -- the restriction of a private property right without just compensation.

The interaction of the new conservation elements with other agricultural programs, especially supply control, further complicates the evolution of farmland property rights. This interaction is not accidental. For example, consider the following statement in the Senate Agricultural Committee's discussion of the conservation reserve. "The conservation acreage reserve is the foundation of all future agricultural and conservation policy, given that erosion rates on some croplands are exceeding 30 tons per acre per year. It is important to move quickly toward devoting this acreage to less intensive uses (U.S. Senate, pp. 307-308)." Unfortunately we have only partial experience with this new set of conservation elements to predict how production adjustment will be accomplished from year to year. Information from the Soil Bank years will be helpful but less than perfect since the program ineligibility, multi-year set-aside and conservation easements were not in effect then. Surely, the movement to more long term supply control measures will involve some flexibility cost when short term production adjustments are necessary. An important question for future research is how large that cost might be in relation to increased conservation benefits.

Finally, we might ask what future changes in farmland owners' and operators' rights do these conservation elements portend? Such prognosticating involves great risk, of course, but is worthwhile if we are to anticipate the trend of change and aid that social adjustment process with research, education and extension programs. Following Batie and Braden again, the direction is clearly toward altering the landowners' and operators' set of incentives to use farmland in ways that significantly affect other parties, either future food consumers or present off-site resource users. Given the reduced political base of the agricultural production industry and the growing number of conservation/environmental groups who perceive environmental costs from farmers' actions, that trend should continue. Moreover, the passage of program ineligibility provisions may signal society's willingness to impose real costs on farmland owners and operators and an ultimate shift toward the regulatory environmental policies that apply to other U.S. industries. If this portrayal is accurate, research on the institutional changes that aid the property rights evolution but minimize the social adjustment costs should be high priority.

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ECONOMIC OUTLOOK FOR FAMILIES--1986
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The economic environment in which families make decisions has been characterized by slow, sustained growth and moderate price increases in 1985. Although growth in the economy stepped up in the third quarter, slow growth in Gross National Product (GNP) and prices is projected for 1986.

Real GNP rose at a 4.3-percent annual rate in the third quarter of 1985, compared to a 1.1-percent annual rate in the first half and a 2.8-percent rate since mid-1984.[1] Growth was led by a strong increase in consumer spending in July, August, and September, with real final sales increasing at a 4.1-percent annual rate. In October, however, spending declined 0.9 percent.[2] Prices, as measured by the Consumer Price Index for all Urban Consumers (CPI-U), rose 0.2 percent each month during the third quarter to an overall level 3.2 percent higher than the same quarter of 1984.[3]

Consensus forecasts for 1986 are generally conservative, suggesting real GNP will increase 2.5 percent and prices 4.0 to 5.0 percent. Few forecast a major recession in 1986; similarly, few forecast strong, sustained growth. Factors which bode well for the economy in 1986 include a high level of consumer confidence; stabilizing, and in some cases declining, energy prices; and small inventories. Potential problems include persistently high real interest rates, high debt levels, surging imports, and excess industrial capacity.

Economic growth and relative price stability during the past several years have improved the economic security of many families. The process of growth, however, has been uneven and has created risks for individuals and families. Growth requires that both labor and capital be continuously reallocated to their most efficient uses. In this process, new industries replace established industries and production shifts from one sector, region, or nation to another.

This process of resource allocation, coupled with other economic trends such as shifting imports and exports and changing demand for products and skills, have been particularly critical for some segments of the population. Farmers and their families; workers in mining, heavy industries, and textiles; and households with just one adult available to work have seen their opportunities

[1] Estimates of GNP are published monthly in the Survey of Current Business, U.S. Department of Commerce, Bureau of Economic Analysis.

[2] October figures are based on flash estimates compiled from limited and preliminary data and therefore subject to considerable revision.

[3] Monthly CPI data are published in News and the CPI Detailed Report, U.S. Department of Labor, Bureau of Labor Statistics. Current CPI information is also available via taped telephone message at (202)523-1239.

for advancement and financial security diminish. In addition, all families find that in periods of rapid economic change financial decision making is both more complicated and more important.

This paper reviews the economic conditions and trends affecting both the income and expenditure sides of the family ledger, as well as indicators of the ability of families to balance the two. Financial management issues are examined in light of current economic conditions and the outlook for families.

Employment and Income

Employment and income trended upward in 1985, extending a 3-year path. Both are likely to continue growing in 1986, although at a diminishing rate.

Civilian employment reached 107.9 million in October and matched the record high employment-population ratio of 60.3 percent set in March 1985.[4] Over the year the number employed increased 2.2 million. Most of the employment gains occurred among adult women. Service sector and white collar jobs were the primary focus of growth. More than half of the increase was among managers and professionals; in addition, strong gains were shown among administrative support workers. Manufacturing employment, including machine operators, assemblers, and inspectors, declined during the January-September period, however.

Unemployment in 1985 stabilized near the 7 percent level, although rates varied widely by population and occupational groups. For example, in October, when the unemployment rate for all civilian workers was 7.1 percent, unemployment was 6.1 percent among whites, compared to 15.0 percent among blacks, and 6.2 percent among adults, compared to 20.1 percent among teenagers. Managerial and professional workers experienced 2.3 percent unemployment compared to 10.6 percent for operators, fabricators, and laborers.

The duration of unemployment declined over the year as the level of employment increased and the incidence of unemployment stabilized. The median duration of unemployment as of October 1985 was 7.1 weeks, with more than two-fifths of those unemployed out of work for less than 5 weeks. Similarly, the number who reported involuntarily working part time diminished over the year.

Employment, of course, is the major factor influencing income. Wage and salary income, which comprises about 60 percent of personal income, sustained a growth path of nearly 6 percent in 1985. Growth in total personal income, as measured in the aggregated National Income and Product Accounts (NIPA), slowed sharply in recent months, however, to an annual rate of 4.7 percent, down from 7.4 percent at the beginning of 1985. Declining farm income and personal interest income account for much of the slower growth in total income over the year.

The trend toward erosion of earned income and expansion of nonearned income that prevailed early in the decade will be reversed if wages continue to lead income growth in 1986. This would mean that relative income gains made by nonfamily

[4] Employment data are published monthly in News and Employment and Earnings, U.S. Department of Labor, Bureau of Labor Statistics.

households, including single elderly persons, would be lost (4). On the other hand, with trade pressures and with unemployment above its historical average, wage growth is likely to moderate in 1986. This would mean that gains would be similar across all sources of income and consequently the relative income position of earners and nonearners would remain about the same in 1986 as earlier in the decade.

Reduction in the poverty rate has been an important consequence of growing personal income. After significant increases in the number and percent of persons below the poverty line in 1982 and 1983, the poverty rate declined to 14.4 percent in 1984.[5] Following the pattern set in 1982 and 1983, however, poverty is becoming more concentrated among children under 18 years old, whereas persons 65 and older are less likely to be in poverty.

The poverty population may be changing in other ways as well. Duncan et al. argue that from year to year "an astonishing amount of turnover takes place in the low-income population" (1, p. 3). Changes in family composition, especially divorce and remarriage; movement into and out of the labor force; and other critical life events, such as illness and disability, generate massive swings in income and demands on income. Households in which the breadwinners work in trade-sensitive industries and those with only one earner will be especially vulnerable to such swings in 1986.

Information on household income lags that available on aggregate personal income by about 1 year. The latest figures show median family income rose to $26,433 in 1984, 3.8 percent above the 1983 level after adjusting for inflation (see table 1). Households in the West, married couples, and female-headed households with no husband present showed the greatest income gains. This probably reflects expansion in service and white-collar employment, in which a growing number of jobs are held by women. Although household income data for 1985 will not be available until the March 1986 Current Population Survey, trends in the personal income component of the NIPA, as well as continued labor force expansion, suggest that the income growth experienced in 1984 will extend into 1985 and 1986.

A major issue influencing income available to families in 1986 is proposed income tax reform. In 1983, the most recent year for which data are available, taxes absorbed about 21 percent of total income received by households (7).[6] Although the tax liability of families has declined in recent years as a result

[5]The poverty threshold for a family of four was $10,200 in 1984. It is expected to increase to about $10,560 in 1985 and $11,000 in 1986. See "Poverty thresholds and poverty guidelines," Family Economics Review 1985(1): 17-18, for details on calculation.

[6]Taxes included Federal individual income taxes, State individual income taxes, FICA and Federal retirement payroll taxes, and property taxes on owner-occupied housing.

of the Economic Recovery Tax Act of 1981, not all families have benefited equally. The tax burden on families with children, female headed families, and poverty level households has been of particular concern.

The House Select Committee on Children, Youth, and Families evaluated major tax reform proposals, concluding that those most "pro-family" adjusted the personal exemption to better accommodate the rising cost of children, increased the standard deduction or zero-bracket amount to reduce or eliminate tax on poverty level households, and extended tax-deferred Individual Retirement Accounts (IRA's) to full-time homemakers (8, 9). Many of these reforms are incorporated into tax plans currently debated in Congress (see table 2).

Tax reform is an important part of the political and economic agendas for 1986. All of the proposed reforms attempt to simplify the Federal income tax system by reducing the number of tax brackets and deductions and streamlining the definition of taxable income. This will generate lower marginal tax rates coupled with higher taxable incomes. Families can anticipate that, regardless of the reform package ultimately promulgated, they will need to relearn the basic principles of tax planning in 1986.

Expenditures

Consumer spending has driven the recent upturn in the economy much as it has led economic growth during the past several years. The question for 1986 is whether consumers can sustain spending at levels sufficient to continue fueling economic growth.

Spending is determined by willingness and ability to buy. Both of these factors have been in abundant supply in 1985. The Index of Consumer Sentiment registered 96.0 in January, up three points from its level at the close of 1984.[7] Sentiment, though down slightly in September at 92.1, has continued strong throughout the year. Similarly, consumers entered 1985 with high and growing levels of personal income. Problems which may have distorted spending patterns in the past--such as rapid and erratic price increases, high nominal interest rates, and prolonged unemployment--were resolved for many families in 1985.

Inflation continued a subdued course in 1985. The price of consumer goods increased at an annual rate of only 0.4 percent from March through September. Aided by a flood of Japanese and European imports, the price of durable goods actually declined at a 4.5-percent annual-adjusted rate during the same period. Services, led by medical care, increased at a 5.3-percent annual rate, bringing the CPI-U to a 2.8-percent annual rate of increase for March through September. This year is expected to end with about a 3.3-percent increase in prices.

After years of living with the "false charm of inflationary growth" (6, p. 49), moderating costs have raised a new and somewhat unexpected concern: How to cope with the rigors of a noninflationary economy. In the seventies, inflation

[7] This measure of consumer confidence is collected as part of the Survey of Consumer Attitudes by the Institute for Social Research, University of Michigan. Richard T. Curtin is director of the survey.

reduced the real cost of borrowing, encouraging families to mortgage future earnings to meet current consumption needs and wants. Inflation also reduced the value of cash balances, leading some families to deplete cash reserves in favor of illiquid, but inflation-resistant, assets. Today these households find that paying back debt with noninflated wages can severely strain the family operating budget. Similarly, inflation-resistant assets such as housing and farmland--which families borrowed money to purchase or borrowed against to finance other investments or needs--may have declined in value resulting in declining net worth and exposure to bankruptcy.

Financial readjustments have been required for others as well. Retired persons living on interest income from savings have seen their earnings sink as inflation, and subsequently nominal interest rates, have declined. Many have responded by switching to high-risk investments in search of the inflated yields to which they became accustomed in the late seventies and early eighties. Some unionized workers who earned double-digit wage increases several years ago are now experiencing 2- and 3-percent nominal wage increases resulting in stagnant or declining real wages.

Most families have benefited from disinflation, however. Those purchasing durable goods, such as cars, have seen falling prices during 1985. Households with adjustable rate mortgages have paid declining mortgage payments. Savers setting aside money for long-range goals, such as education of children and retirement, have become more confident of future purchasing power. Most importantly, disinflation has restored rational incentives to the economy, reducing speculative buying and investing. This has led to better market information for consumers who, in turn, can make purchase decisions based on real needs rather than in anticipation of price increases. At the same time, investment has moved toward long-term expansion of productive capital rather than short-term financial manipulation. This lays the groundwork for future economic growth and steady improvement in family economic well-being.

Prices are poised for a modest upturn in 1986. Wage settlements negotiated in 1985 and anticipated for 1986 will put some upward pressure on prices. Similarly, import restrictions currently debated could cost consumers more for clothing, sugar, automobiles, and home electronics. The prices of other basic consumer commodities, such as food and energy--which have been stable or declining in 1985--also will edge upward in 1986.

In 1987 the Bureau of Labor Statistics, U.S. Department of Labor, will introduce a revised CPI to reflect current population and spending patterns, as well as an improved housing survey and other technical enhancements (4). Although consumer expenditure patterns do not change rapidly, changes in relative prices, real income, demographic characteristics, and tastes are ultimately reflected in changing purchasing patterns. The CPI revision will be based on data collected as part of the continuing Consumer Expenditure Survey initiated in 1980.[8] 1982-84 expenditure data and 1980 census information will be used in the revision.

[8] Data from the 1980-81 Consumer Expenditure Survey are now available on public use tapes. Several projects using these data, including new estimates of the cost of raising children, are proposed for the Family Economics Research Group in 1986.

Interest rates, like prices, exert a strong influence on consumer spending, particularly for durable goods, such as appliances and autos, and for housing. Sharp swings in auto and housing sales evidence the sensitivity of consumers to changes in installment and mortgage rates. Although real interest rates remained high, nominal rates paid by consumers have declined steadily in 1985. For example, the average rate for 48-month new car loans offered by commercial banks was 13.16 percent in May 1985, compared with 13.71 percent in 1984.[9] Promotional rates offered by manufacturers and dealers in August and September reduced the average rate for new car loans another 2 percentage points. Similarly, conventional mortgage rates declined more than 1 percentage point during the year to about 11 percent. As a result, auto sales reached a 9-year high in September and housing starts and sales generally maintained an upward path in 1985.[10]

The outlook for consumer interest rates in 1986 is clouded by two factors: First, continuing controversy concerning the impact of funding the Federal deficit on the demand for credit, and second, uncertainty concerning Federal Reserve Board domestic monetary policy actions in light of the strength of the U.S. dollar. As much as 50 percent of net savings in the economy may be absorbed by Federal credit demands in 1986. This could place upward pressure on all interest rates, including those charged to consumers. At the same time, in efforts to further reduce the value of the U.S. dollar relative to foreign currencies, the Federal Reserve Board may act to ease monetary policy, thereby reducing interest rates. The unknown probabilities of these conditions and actions, combined with uncertain estimates of their consequences, have created wide and varied forecasts for interest rates. Predictions range from a 3-percentage-point increase to a 2-percentage-point decrease in mortgage rates and a 2-percentage-point increase to a 1-percentage-point decrease in installment rates. Under any scenario, nominal rates may vary but real interest rates should remain in the same broad range in 1986 as in 1985.

What may differ in 1986, however, is consumer demand for adjustable rate loans. Adjustable rate instruments account for almost half of all new mortgages and perhaps 20 percent of new installment loans (2). Lenders embraced adjustable rate loans about 4 years ago as a way to manage deregulation of the financial markets. These instruments allow lenders to shift the risk of fluctuating interest rates to borrowers. When interest rates were high, consumers flocked to adjustable rate loans which offered initial rate discounts. As rates stabilize, most consumers are likely to prefer the security of fixed rate financing for their homes and durable goods.

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[9] Interest rate data are published in the Federal Reserve Bulletin, Board of Governors of the Federal Reserve System.

[10] Housing starts dipped to a 1.6 million-unit annual rate in September, down from about 1.8 million earlier in the year. The industry consensus is that this was an aberration that will be corrected before the end of the year.

1985 has been a year of big spending in the household sector. Much of the demand for durable goods that was deferred from the 1980-1981 recession, as well as new demand created by an increased rate of household formation generated by the baby boom, has been met. Even with moderating prices and interest rates, consumer spending is expected to level off in 1986. Specifically, demand for durable goods will decline during the year, whereas spending on nondurable goods should remain stable and spending on services may increase. Over the longer term, spending for services will likely claim an increasing share of the household budget as service prices show high relative increases and the U.S. population ages.

Net Worth

Consumer net worth, that is assets minus liabilities, is currently equal to about 350 percent of annual disposable income, up from about 330 percent in 1984.[11] This year's increase in net worth has come in spite of significant decreases in the rate of saving and increases in consumer debt. It is primarily the product of rising stock values and growing pension assets. The outlook for 1986 is for continued growth in net worth relative to income. The portfolio of assets held by individuals and families may change significantly, however. The distribution of wealth among households also may change.

Savings plummeted to 2.8 percent of disposable personal income in August as households increased personal expenditures and credit use. The rate of saving has averaged only 4.4 percent so far in 1985, down from averages of 7 to 8 percent through the midseventies and 6 percent in the late seventies and early eighties. The outlook is for the saving rate to recover slightly as incomes rise and expenditures moderate in 1986.

The trend toward low rates of saving has been explained by several factors. Demographic changes, including aging of the baby boom generation to the prime spending years and increasing numbers of two-earner families (who presumably have less need for the security of money in the bank), lead the theories of declining saving. Saving also tends to move in a counter-cyclical pattern. During periods of economic expansion, consumers are optimistic and often respond by increasing spending and debt. During downturns, consumers retrench, reducing spending and debt and increasing their rate of saving. November 1985 marks the beginning of the fourth year of economic expansion. The current low rate of saving is characteristic of such a sustained expansion. Finally, declining nominal rates of return may be discouraging saving among those accustomed to inflated returns earned several years ago.

In 1985 there was a shift in the composition of savings. Demand deposits increased from 4 percent of savings in 1984 to 14 percent in 1985. Additions to securities also increased in 1985 to almost 16 percent of new savings dollars, up from 9 percent in 1984. Similarly, the share of savings increased for pensions and insurance. At the same time, time and saving deposits absorbed

[11]Information on individual and household assets, liabilities, saving, and debt patterns are published in Flow of Funds and Sector Accounts, Board of Governors of the Federal Reserve System.

only 15 percent of new savings dollars in 1985, compared to 30 percent in 1984. Net additions to money market accounts also fell in 1985 to 3 percent of savings, compared to almost 7 percent in 1984. The combined effect of these shifting patterns shows a larger share of savings moving into liquid accounts, stocks, and pensions in 1985 than in 1984. This suggests that savers have become very sensitive to changes in interest rates and are taking advantage of rising stock prices while holding other assets liquid in anticipation of improving rates of return. It also sets the stage for continuing portfolio adjustment in 1986.

Consumer debt has grown at a record rate in 1985 to about $520 billion, up 20 percent from a year ago. The ratio of consumer credit to disposable personal income is 18.9 percent, near the record set in 1979. Rapid growth in consumer credit has fueled controversy concerning the debt burden of families and the outlook for 1986. At issue is the point at which consumers will slow their credit buying. Those who see debt levels falling sharply in 1986 argue that consumers are currently overburdened; and with only modest increases in income projected for 1986 and most demand for durables met, they are neither able nor willing to add more debt. Others argue that although debt levels are high, actual repayment demands are low due to longer term credit obligations, net worth--particularly in the form of liquid assets--is high, and optimism remains strong. They predict only small decreases in growth in consumer debt in 1986.

Measurement of consumer debt loads is complicated because debt can include convenience use of credit cards as well as long-term borrowing. Forty percent of the households in the 1983 Survey of Consumer Finances reported using bank credit cards; half of those paid the debt in full each month. This use of credit as a substitute for cash or checks has raised the debt-income ratio 1 percentage point since 1977 (5). It has not raised the debt burden to families by an equal amount. Similarly, the ratio has been raised by a change in the average maturity of auto loans from 3 years in 1974 to 4 years today. This has increased the total credit costs of such loans but has improved the cash flow of auto borrowers. As more households use credit for convenience purposes, actively manage cash flow, and are exposed to new credit instruments introduced as the result of financial deregulation, consumer credit is likely to expand during the late eighties. Whether this expansion signals a problem for families will depend on the purposes for which they are using credit and their ability to manage increasingly complex financial instruments.

Financial Management Issues

In 1986 family financial practices will be influenced by changes in income and earning patterns resulting from demographic changes and by expenditure and management changes resulting from legislative and regulatory initiatives. The economic environment affecting family choices is expanding. World economic issues, particularly currency exchange rates and trade; national political policies, particularly income tax reform; and interstate and regional agreements, such as those in banking and industrial development, will determine the income opportunities and marketplace choices available to individuals and families throughout the remainder of the decade.

The population is changing. There is a growing cohort of persons age 25 to 39. This change has most often been associated with spending patterns, credit use, and saving, but it also has important implications for job opportunities and income levels. The economy has successfully expanded to create jobs for new workers; however, it has been less successful in creating opportunities for advancement. Currently, there is evidence of a growing "opportunity crunch" in which many workers are finding there are few chances for advancement. A growing number are responding by assuming the risks of self-employment and are joining the entreprenuerial movement. Other demographic factors may be contributing to growing self-employment. As more families have two earners, the costs and risks of self-employment are more easily born within households. These workers and their families carry an extra burden for financial management activity in order to assure that they maintain adequate health insurance and retirement plans.

There are related employment and income consequences arising from changes in the population. As more families have entered the childbearing and rearing years, geographic mobility has declined. In 1970, 1 in 5 households moved; in 1984, 1 in 7 moved. Like the trend in self-employment, mobility may also be influenced by growth in the number of two-earner families. Other demographic trends, such as growth in single parent households, are closely related to family income and the growing incidence of poverty among children.

Family financial management will be influenced in 1986 and beyond by several legislative and regulatory actions signaling a modest return to consumer protection initiatives. For example, agencies regulating credit practices issued rules effective January 1, 1986, which will prohibit certain remedies to enforce consumer credit obligations.[12] Prohibited remedies will include confessions of judgment, wage assignments, and pyramiding of late charges. Also, co-signers will receive a notice explaining co-signer obligations. The new rules will afford substantial new protections to consumers.

A more controversial form of consumer protection has been proposed by professional organizations representing the financial planning industry. They would like to see official registration, certification, or licensure of financial planning professionals to protect consumers from unscrupulous financial advisors. As the financial planning industry grows, tension between those who wish to limit entry into the profession and those advocating an open market will likely work to move this issue to the consumer agenda.

The most significant change in financial services in 1986 is likely to be continued expansion of interstate banking. Although official policy in this country over the last 50 years has opposed interstate banking, efforts to circumvent this policy have been numerous and growing. Large banking organizations now conduct a wide range of banking activities across state lines. About 7,600 offices of out-of-state banks provide services through consumer finance companies, loan production offices, and Edge Act Corporations. Other banking services, such as credit cards and automated teller machines, operate without bank offices. "Nonbank banks," such as retailers and financial

[12]Agencies included are the Federal Reserve Board, Federal Home Loan Bank Board, and the Federal Trade Commission.

corporations, provide similar services across state lines. Interstate banking is positioned to expand in 1986.

Closely related to changes in the banking system is the issue of regulatory reform of deposit insurance. If financial institutions become larger as the result of interstate banking, the risks to insurance funds will become more concentrated. Given this, and the increasing--although still low--rate of bank failures and the collapse of several State-supported deposit insurance systems, regulatory reform is likely to be proposed soon. This could be a significant expansion in consumer protection.

Families will enter 1986 and the late eighties with the benefits of a sustained period of economic growth behind them. They have used this growth to increase net worth, acquire durables, and adjust to noninflationary spending and saving patterns. They have demonstrated growing economic sophistication and financial management skills during the past several years. This will aid them in meeting the goal of financial independence in a world of growing economic interdependence.

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Table 1. Comparison of median family money income in 1983 and 1984, by selected characteristics

Characteristic	Median family income			Percent change in real money income
	1984	1983		
		Constant dollars	Current dollars	
All families	$26,433	$25,465	$24,580	3.8
Race of householder:				
White	27,686	26,684	25,757	3.8
Black	15,432	15,028	14,506	2.7
Spanish origin[1]	18,833	17,566	16,956	[2]7.2
Region:				
Northeast	28,487	27,638	26,678	3.1
Midwest	26,753	25,620	24,730	4.4
South	24,094	23,305	22,495	3.4
West	28,077	26,513	25,592	5.9
Type of family:				
Married couple family	29,612	28,268	27,286	4.8
Wife in paid labor force	34,668	33,263	32,107	4.2
Wife not in paid labor force	23,582	22,678	21,890	4.0
Male householder, no wife present	23,325	22,631	21,845	3.1
Female householder, no husband present	12,803	12,213	11,789	4.8

[1]Persons of Spanish origin may be of any race.
[2]Not statistically significant.

Source: U.S. Department of Commerce, Bureau of the Census, 1985, Money income of households, families, and persons in the United States: 1983, Current Population Reports, Consumer Income, Series P-60, No. 146; calculations based on unpublished data from the March 1985 Current Population Survey.

Table 2. Selected features of tax reform proposals currently before Congress, November 1985

Feature	Current law (1986)	Administration proposal	House Ways and Means Committee bill
Individual tax rates	14 brackets from 11 to 50 percent, indexed.	3 brackets: 15, 25, and 35 percent, indexed.	4 brackets: 15, 25, 35, and 38 percent, indexed.
Exemptions	$1,080, indexed.	$2,000, indexed.	$2,000, indexed.
Standard deductions:			
Single	$2,480, indexed.	$2,900, indexed.	$2,950, indexed.
Joint	$3,670, indexed.	$4,000, indexed.	$4,800, indexed.
Head of household	$2,480, indexed.	$3,600, indexed.	$4,200, indexed.
Two-earner deduction	Yes.	No.	No.
Child care expenses	Tax credit of 30 percent, up to $720 for singles, $1,440 for marrieds.	Tax credit of 30 percent, up to $720 for singles, $1,440 for marrieds.	Tax credit of 30 percent, up to $720 for singles, $1,400 for marrieds.
Income averaging	Yes.	No.	No.
Health insurance	Employer paid premiums not taxed as income.	Employer paid premiums taxed up to $120/year for individual, $300/year for family.	Employer paid premiums not taxed as income.
Itemized deductions:			
State and local taxes	Deductible.	Not deductible.	Deductible.
Mortgage interest	Deductible.	Deductible for principal residence.	Deductible for 2 residences.
Other personal interest	Deductible.	Limited to $5,000 over investment income.	Limited to $20,000 over investment income.
Retirement savings:			
IRA	$2,000.	$2,000.	$2,000.
Spousal IRA	$250.	$2,000.	$250.

Source: Joint Committee on Taxation and House Ways and Means Committee, 99th Congress of the United States.

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OUTLOOK '86

Some farm families have had to make the difficult decision to leave their farming businesses in 1985. Unless the economic factors that influence the agricultural sector make positive movements in the near future, additional farm families will be faced with the same decision in 1986. Although individual farmers and their families cannot make a direct impact upon several of the factors that influence the markets for their products, they can take actions that will protect the family from further adverse economic conditions. This morning, after highlighting the economic forces that have an impact upon farm families, I will discuss the strategies farm families have used in reaction to these economic influences. Although the economic situation is not expected to drastically change in the near future, projections will be made as to how these forces will continue to influence farm families. Finally, suggestions will be made for farm family financial management.

Macroeconomic Influences [1]

The current distress among farmers is rooted in the inflationary decade and high farm income of the seventies and adjustments to sharply different economic conditions of the eighties. Throughout the seventies, farmers faced rapidly expanding exports, accelerating inflation, and low to negative real interest rates. High commodity prices increased farm income, providing both the incentive and financial means for farm expansion. As the value of farmland increased with the prospects for future growth in farm income, farmers used this additional wealth as a base on which to borrow heavily to invest in new capital equipment, adopt new production technologies, and purchase increasingly expensive farmland. Between 1970 and 1981 the value of farmland rose by 306 percent nationally (USDA, 1984) and debt-to-asset ratios of farms declined. As demonstrated in the 1981 Farm Bill, the basic concern at the end of the decade was to meet world and domestic demand for food and fiber.

A reverse direction in the economic factors of the early eighties brought an abrupt halt to prosperity in the agricultural sector. Commodity prices fell world wide; the value of the dollar rose rapidly against major currencies, further dampening export demand; and inflation was slowed by stringent control of monetary growth. Real interest rates jumped to unprecedented levels of 8 to 10 percent. Farm profitability declined; production costs, especially for fuels, machinery, and interest, had risen rapidly while farmers had pursued their hectic expansion of output. The combination of rising production costs and lower prices received by farmers increased the fluctuations of net farm

[1] This section on macroeconomic influences extensively utilizes information contained in Wilson and Sullivan, 1985, and USDA, 1985a.

income. Revenue prospects were dimmed even further by droughts in 1980 and 1983. Not only did land price escalation halt in 1981 as a result of these developments, but prices since then have declined substantially in some of the most prominent farming areas. The attraction of farmland for hedging purposes diminished as inflation began to slow. Interest paid on real estate debt skyrocketed, which made the purchase of farmland and refinancing more burdensome. Farmers' debt levels, which were based on the value of farmland in the seventies, were no longer sustainable on the declining land values of the eighties. Farmers whose solvency depended on continuously rising land values or who pursued an aggressive expansion strategy were pushed toward insolvency. In contrast to the 1981 farm legislation, the debate on the 1985 Farm Bill centers on how to provide adequate farm income by sustaining high farm prices in a period of farm surplus, and meet the challenge of reducing the Federal budget deficit.

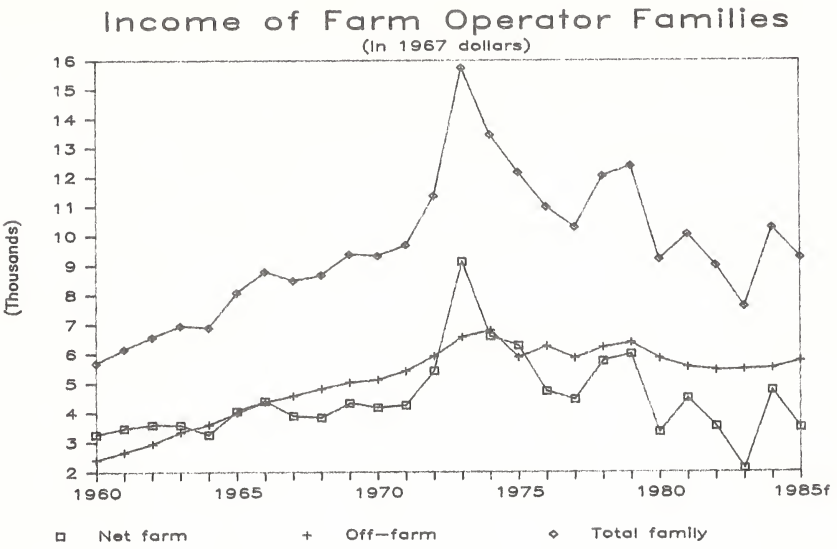
Impact on Farm Families

The economic events of the seventies and eighties have resulted in great variability of farm income levels. Although farm families have always experienced fluctuations in levels of income from one year to another, the variability of net farm income since the late seventies makes it difficult for farm families to make financial management plans. As depicted in the following chart,[2] real farm income experienced a steady increase through the sixties, then varied from a per farm high of $9,144 in 1973 to a low of $2,121 in 1983.

Although inflation has decreased from the double-digit period of the late seventies and early eighties, consumer prices as measured by the Consumer Price Index have continued an upward movement. The levels of living of farm families with declining farm income deteriorated as the prices of the goods and services they consumed continued to rise. Since very few of today's farm operations are subsistence farms that produce most of the family's consumption items, farm households have turned to other ways to maintain their levels of living.

The majority of farm families use off-farm employment as a means to provide a saftey net for their widely fluctuating farm income. This is not a new economic reaction by farm families to the events of the eighties; for 16 of the last 18 years, off-farm income has exceeded net farm income. Since the midseventies, real farm income has declined on a per farm basis, whereas off-farm income has

[2] Note that the data points in the chart were calculated by dividing aggregate income data by the number of farms. Although these are arithmetic means, they do adjust for the decline in the number of people who are dependent upon farm income. Averages, however, present statisticial aberrations. The large number of small rural residence farms distort the off-farm income averages, whereas large net farm incomes of a few large farms distort net farm income averages. For example, large farms with agricultural sales of $500,000 or more comprise 1 percent of all farms, produce about one-third of all U.S. farm production, and earn about 4 percent of their total income off the farm. Whereas, minifarms with agricultural sales of $2,500 or less comprise about 25 percent of all farms, produce less than 1 percent of all farm production, and earn 102 percent of their income off the farm.



Sources: U.S. Department of Agriculture, Economic Research Service, 1984, Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1983, ECIFS 3-3, table 51; U.S. Department of Agriculture, Economic Research Service, 1985, Agricultural Outlook, AO-113, p. 16; and unpublished data.

been fairly stable (chart). When combined together into total family income, however, the wide fluctuations as exhibited in net farm income still are present in total family income.

Still, the majority of farm families have a farm operator whose primary occupation is farming (U.S. Department of Commerce, 1984). This, in contrast to the magnitude of off-farm earnings, suggests that families are sending someone other than the main operator into the labor market. They may feel that the full-time farming status of their operation is in jeopardy if the male (95 percent of all farm operators (U.S. Department of Commerce, 1984)) is employed off the farm; therefore, other family members are employed off the farm. Farm women, especially, are continuing to enter the labor market at a rapid pace. Although the labor force participation rate increased in the seventies for all women, the rate of increase for farm women was nearly three times the rate of increase of their nonfarm counterparts (see table).

Data from a recent study (USDA, 1985b) in a Missouri corn belt county, of farmers who had left their farms over the last few years, suggests that many women work off the farm regardless of the farm's financial situation, with the

Labor force participation rates and rates of change[1] of rural farm and nonfarm women, 1930-80

Year[2]	Total	Rural farm	Nonfarm[3]
		Percent	
1930.....	22.1	12.3	24.9
1940.....	25.4	12.1	28.7
Rate of change...	14.9	- 1.6	15.3
1950.....	28.9	15.7	30.9
Rate of change...	13.8	29.8	7.7
1960.....	34.5	22.9	35.4
Rate of change...	19.4	45.9	14.6
1970.....	39.6	28.3	40.0
Rate of change...	14.8	23.6	13.0
1980.....	49.9	40.3	46.0
Rate of change...	26.0	42.4	15.0

[1] Rates of change are calculated by dividing the difference between the labor force participation rates of the two decades by the previous decade's labor force participation rate.

[2] Ages of women in the labor force increased over the years--10 years old and over were included for 1930; 14 years old and over for 1940, 1950, 1960, and 1970; and 16 years old and over for 1980.

[3] Urban plus rural nonfarm.

Sources: Calculated from U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population for the years 1980, 1970, 1960, 1950, 1940, and 1930.

men usually seeking outside employment at the downturn of the farm operation. About nine-tenths of the families indicated they had intended for the farm to provide most of the family's income; but even when the farm operation was at its largest, one-third of the men and one-half of the women earned nonfarm income. When financial stress reached its maximum during their last year of farming, 60 percent of the men and 57 percent of the women held nonfarm employment. Ten percent felt they could have kept their farm if they could have gotten a nonfarm job, but 50 percent apparently recognized the limitations of this income generating strategy, saying they could not keep the farm even if they had a nonfarm job. Apparently, a few of the farm families under financial stress viewed off-farm employment as a way to preserve their chosen farm lifestyle, but more (especially male operators) used it as a means to exit farming and enter another career.

In the early eighties nearly one of every four people living on farms lived in poverty (U.S. Department of Commerce, 1985a). As reported for the second quarter of 1984, 9 percent of farm households received means-tested benefits such as food stamps and medicaid (U.S. Department of Commerce, 1985b). Since the high poverty rate has been fairly stable over the eighties,[3] the needs of farm people have placed a heavy burden upon local and State governments in depressed farming areas to provide services and economic support. As revenues decline from lower taxes received, local and State government agencies are unable to maintain costly programs for farm families and other families seeking public assistance.

Local rural businesses also suffer from the economic depression, as experienced in specific farming areas. As local businesses experience a slowdown from less spending by farm families, they too must curtail their economic activity. Often this results in fewer employment opportunities or high unemployment in the small farm community. This can be devastating to the local farm family who is dependent on off-farm employment.

Agricultural banks, which often are the financial centers of the rural community, are encountering problems as they try to serve the growing financial needs of the rural community. With the value of their assets being lowered by the fall of farmland prices, these overextended banks are under severe financial stress as banking officials demand better portfolios. Compounding the banking situation, farm families who have a poor cash flow are using personal and household savings accounts for living expenses and retiring farm debt. The drawing down of savings accounts, coupled with a decline in farmland values, results in a downward economic spiral for agricultural banks. These circumstances make it increasingly more difficult for the banks to respond to pressure by the community to refinance the growing farm debt.

With commercial banks providing about a fourth of all outstanding farm credit, strict banking policies and regulations concerning collateral for these loans, combined with a decline in asset values and variable net farm income, can be

[3] A trend over a longer period of time cannot be tracked, since the separate poverty threshold for persons living on farms was eliminated in 1981 (Scholl, 1983). The elimination of the differential increased the number of farm families in poverty by about 20 percent.

cataclysmic to the farm family. Agricultural members of the American Bankers Association in the 1985 Midyear Farm Credit Survey estimated that 3.8 percent of all farmers filed for bankruptcy (Herr, 1985). This rate has quadrupled from the estimated rate of 0.75 percent in June 1982 (American Bankers Association, 1983).[4]

Economic Projections and Impact on Farm Families

A major change in any of several economic factors could affect the future of the farm family's well-being. For instance, the strength of the dollar in comparison to other currencies is one of the prevailing economic problems that has a negative impact on farm families. A strong dollar results in slow and unbalanced economic growth, with industries suffering that produce goods for export, such as agriculture. U.S. farm products will be relatively expensive in the world market, and U.S. surpluses will continue to grow. The resulting effect on farm prices will add to the severity of the current farm loan problem. An optimistic scenario suggests that if the dollar weakens, farm financial stress will ease, resulting in higher farm income and stabilized farmland values. Barring major change in economic policy, however, a continuation of the current macroeconomic problems is expected in the short run.

As previously stated this morning by Colien Hefferan in her "Economic Outlook for Families," the forecast is for a general slowdown in the economy with a stabilization of real family income. A gradual decline in economic well-being is projected for farm families. The economic position of farm families will be relatively worse than predicted for families in the rest of the economy. Farm families with predominantly cash grains, general livestock, or dairy operations will continue to experience financial stress. The Corn Belt, the Lake States, and the Northern Plains regions will sustain the highest concentration of families under severe financial stress.

Although 1984 was the best year of the eighties for net farm income, great variability continues. As projected by John Lee yesterday in his address to this Outlook '86 Conference, net farm income is not predicted to maintain the 1984 level. Net farm income for 1985 is forecast to be near the level obtained in 1981 (see chart). With a decline in net farm income, the 1985 U.S. farm economy will continue to be sluggish.

An impact of this financial stress on farm families will be the increase of dependency on off-farm employment, with the labor force participation of farm women projected to continue to increase. As indicated earlier, farm families will need to travel beyond their local communities since unemployment will continue to be extremely high in economically depressed farming areas. Off-farm employment will be especially difficult to obtain in agriculturally dependent areas.

[4] The number of farms filing for bankruptcy could increase with passage of pending legislation (HR 2211) that would raise for family farms the debt ceiling of Chapter 13 of the bankruptcy code. Because debts are so high, most family farms must file under the tougher provisions of Chapter 11.

As a result of inadequate income and poor cash flow, additional families will leave their farms in 1986. According to a recent USDA survey (1985c) of 1.7 million farms,[5] about 214,000 farms are estimated to be experiencing financial stress because of a combination of high debt load (a debt-to-asset ratio of at least 40 percent) and an inability to generate enough cash to meet production expenses, repay debt installment on principal and interest, and provide for family living expenses. An estimated 38,000 farms are technically insolvent with debts exceeding the value of their assets.

In an effort to stop the erosion of farmland prices and to prevent further slippage of their assets, agricultural lenders are temporarily retaining the farmland they obtain through foreclosure. Therefore, farm tenancy is anticipated to increase in the short run as farmers who were owner operators rent farmland. Some farmers will eventually reenter farming as owner operators as the price of farmland stabilizes. Since some farm operators will be unable to own the land they farm, the tenant farmer may reemerge with an improved social and economic image from the low-income tenant farmer image of the thirties.

Farm Family Financial Management

For the purpose of discussing farm family financial management, I will classify farm families into four groups.

Group 1. Despite the tone of this paper, the majority of farm families (88 percent) are not experiencing severe financial stress (USDA, 1985c). These families will find the remarks made by Colien Hefferan this morning very applicable as they look to the future for planning their family financial management. Although farm family living levels are becoming more comparable to those of nonfarm families, there will always be some important differences for farm families with respect to the management of family living expenses. As the value of farm assets continue to decline and some of these farm families begin to experience financial stress, they will need professional assistance to preserve or to prevent deterioration of their current financial position.

Guidance materials from the State Cooperative Extension Service (for an example, see Farm Family Living Expenses--Taking Control) can be used to analyze the farm family's current financial management plan or develop new plans. These aids are specifically designed for farm families and can help them determine cash flow for family living expenses. These guidance materials identify discretionary budget categories that can be cut when expenses exceed farm family income.

For some families, goals and financial plans that were conceptualized in the midseventies will need to be reexamined. The high income the farm family experienced during this period was at the peak of its variability, and these high levels should not be anticipated in a realistic financial plan for the rest of this decade.

[5] The survey's estimate of the total number of U.S. farms is less than that counted by the 1982 Census of Agriculture, primarily because the census included 253,147 farms with sales of less than $1,000. Most of the farms undercounted by the survey are in the smallest sales classes.

The financial plan developed by the family needs to incorporate saving, insurance, and retirement. As income on farms dwindled, many farm families chose to exclude those protections for the family. Now they need inexpensive ways to reduce their high personal risks. Some farm families work off the farm to provide group health insurance for the family members. Other employment fringe benefits, such as life insurance, provide economic security that the self-employed farm operator cannot afford for his family. Since farm operators are not required to pay self-employment tax when net farm income for the year is less than $400, and since spouses of self-employed farm operators are excluded from earning Social Security credits, a limited number of farm operator families can qualify for Social Security benefits as retired workers, disabled workers, or survivors. Farm families, however, can continue coverage by paying self-employment tax on gross income in bad years. Compared with private insurance, paying into the Social Security system would provide inexpensive, albeit minimal protection for the farm family. Although most farm families do not currently need or seek income tax shelters, payment into an IRA or Keogh account will allow them to establish a savings for retirement.

Group 2. Representing about 10 percent of all farm families is a group that is having severe financial problems. Highly leveraged and with poor cash flows, these families are concerned about maintaining their desired farming lifestyle.

Understandably, family members under financial stress may have new demands and face challenges to the independence of farm life to reach their goals. For example, in an effort to maintain economic viability, some farmers seek equity outside traditional farm credit sources. These farm families are encouraging nonfamily investors into limited partnerships or the addition of nonfamily stockholders into family corporations. Fringe benefits, such as farm vacations and hunting privileges, may be offered to lure city partners. These farm families are making tradeoffs with their independence to meet their lifestyle goals.

Off-farm employment of the farm woman may be an economic strategy implemented by many financially stressed farm families. More than a replacement of the "egg and butter" money of the previous farming era, off-farm earnings have in many instances kept the family on the farm. Of the farm women who worked off the farm in 1980, one-fourth stated they worked because farm income was inadequate to pay farm expenses. These women, however, were not pleased with their role as economic provider. They were significantly less satisfied with farming as a way to make a living than women who worked off the farm for other reasons.

Recognizing the feelings of women who work to partially support the farm and the importance that off-farm income has for the farm family, farm families may need to seek professional career counseling for off-farm employment. Financially stressed farm couples must receive the maximum return for their investment of time and skills, and a career guidance counselor may be able to identify broad options for both spouses. Since women traditionally earn less than males (65 cents, as compared with every dollar that men earn), the farm family may find that the farm couple could obtain a better rate of return on their time and skills if the husband works off the farm while the wife runs the farm operation.

Limitations in the availability of off-farm employment and other factors such as unmarketable skills may prevent many financially stressed families from entering the labor market. For these families, increased household production for the family's own consumption may be an alternative. Also, these families can maximize their resources by bartering home-produced goods and services with others in the community. Formal structures provided by government agencies or private efforts may be needed to facilitate these types of resource exchanges across the long distances between families.

All purchases for the home and farm need to be carefully scrutinized. The farm household's expenses often appear very small in comparison to the farm operation's production expenses; therefore, many households may find it difficult to control family living expenses when they spend massive amounts on agricultural supplies and equipment.

Today's farm family needs to be autonomous from the farm, especially if the farm has a debt-to-asset ratio of 40 percent or more. These families can no longer use personal savings and checking accounts to finance the farm; doing so jeopardizes the family's economic well-being. Using one financial account for both the household and farm in some situations may allow farm creditors access to all the family's finances.

Group 3. Two percent of all operating farms are technically insolvent. The families in this group are apprehensive about the family's economic security and have the greatest need for financial counselors, educators, social workers, and county extension workers. Some may have used household savings to pay farm debts and lack funds to begin a new lifestyle or a new career. Farm families facing foreclosure of the farm mortgage need to develop an economic strategy to protect the family's finances from farm creditors. These families may need to turn to privately-funded and government programs and services for support until they can relocate.

Group 4. This group of families are those who either seek to reenter farming or who are entering farming for the first time. These families need guidance on beginning a new farm lifestyle. Most will face a reorientation as tenant farmers who do not own the land they farm. Others will eventually be able to purchase land once the price stablizes. The needs of families in group 4 are much different from those of the other three groups. This beginning group will need specific counseling in how to develop a healthy farm financial environment for their families.

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FAMILY RESOURCE MANAGEMENT EFFORTS IN ASSISTING FARM FAMILIES

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The present state of the farm economy challenges those of us in resource management who are programming to assist farm families with the situations confronting them today. This report highlights programming efforts. The specialists in several states are seeking to share ideas and materials (as well as problems as they develop). The programming efforts have taken on TOP PRIORITY in most of the midwest states (and at an informal meeting to share our progress -- California and Vermont were among those present -- it is a high priority nationwide!) Whether the effort is called Project Support (Minnesota), ASSIST (Iowa), CES Farm (Ohio), Rural Route (Illinois), MOFARMS (Missouri), Managing for Tomorrow (Nebraska) or SOS-Strategies on Survival (Wisconsin), there appear to be similar objectives and goals. However, the approaches and target audiences do differ.

Based on the inservice educational programs conducted for county and area faculty, emphasis has been given to:

1) Increasing understanding of the past, present, and future farm financial situation, especially in our own states.

2) Gaining increased competence in analyzing the family and farm financial situation.

3) Increasing confidence in assisting families with goals and resources identification and in decision-making as well as enhancing general interviewing and counseling skills.

4) Providing information and ways to cope with family stress and recognize referral and support systems within community for financial and emotional support.

In some states, the programming also includes suggestions for possible integrated programs which staff could develop for small groups.

Most states seem to be concentrating resources on one-on-one counseling with families or a combination of one-on-one with some small group teaching. The concensus among our staff appears to be that while the group teaching is fine for some phases and efficient, the one-on-one counseling is most effective. Our staff is also among the states seeking to maintain a team counseling/teaching approach. Though we have hired some farm financial analysts, the major responsibilities for the SOS program remain with area teams of county staff. The team usually consists of a home economist, agricultural agent, community resource development agent and in some cases, 4-H agent, with one of these team members serving as leader.

The inservice education has included for all agents: case study work which has involved doing a farm net worth statement, farm earnings statement and business analysis using North Central Regional Publication 34 -- Managing Your Farm Financial Future which is the paper and pencil version of computerized financial package (FINPACK). We have also involved all staff in the discussion and estimating of family living expenses. Though we do not intend to turn home economists into farm management specialists and vice versa, we feel this basic understanding is essential for communication among the team and with the family. Incidentally, we are realistic in our perception that not all staff work well in the team approach, some teams are more successful than others. There is flexibility to develop what works best in the area.

We also recognize that the family will meet with the whole team on most occasions. My colleagues in other states report that meeting with the family to discuss family living goals and what it takes to maintain their lifestyle prior to meeting to discuss farm goals and the farm financial situation generally produces an entirely different approach and mind-set for the family's analysis of their situation. An example of the family situations confronting extension staff follows:

> The home economist is called by the banker (a frequent source of referrals) who is refusing to extend more credit to this family. He sincerely wants to help the family and wants to know what is an appropriate budget for them. Let us begin with the food budget, since we do have some standards for this area. The estimate of $250 for a month (for a family of 5) seems an unrealistic allocation.....especially when one realizes that included in this category is $80 for cigarettes.
>
> This family has made no attempt at record keeping on the family side of the accounts. There is nothing recorded in the check register. Though they do save checks for farm expenses, the rest of the checks had been discarded. The family has $87 in overdrafts this month. In casual credit at the grocery store, they have charged $800. (The wife reports that she thought they had paid on it and it was only $700+. However, there are no records and we have to accept the grocery store records.) The family wants to include $200 tithe/month. They are both working off the farm and want to begin tithing 10% of gross income.
>
> The home economist met with the wife for four hours and then with the banker. She spent the major part of a day working through the situation and gathering meaningful information/materials. She then met with the husband and wife for another four hours. In three weeks, she will follow up with the family's progress. (By the way, the family is now smoking generic cigarettes.)

This intensive one-on-one relationship is a substantial shift in the operating pattern of county and area staff. And this is the reason some states have freed time from regular responsibilities of staff to devote full time to assisting farm families. This type of involvement has pushed toward more effective and efficient methods of collecting the information on family financial management. While such methods are well developed for the farm business and widely used (i.e. FINPACK), the family side has not received as detailed a treatment.

To assist families in estimating family living expenses when there is poor or non-existing data, the collaborative effort of several states (headed by Minnesota and Nebraska) has developed to meet this need. Under development is a computer program that will provide a structured procedure for organizing family income and expense data. It offers a framework for family budget decisions for three types of families: the urban, rural non-farm, and family operating a business (such as a farm). One of the templates within the program will match the family living category of the FINPACK program. A sorting question will ascertain the extent to which the family is experiencing crisis based on a locus of control variable.

If developed as planned, the program is expected to facilitate more involvement in family financial management programming; increase the faculty members competence in dealing with financial counseling concepts (it is an "expert system") and provide a tool to help with the decision-making process for farm families. After obtaining income and expense, information, we are in a better position to help assist with the generation of alternatives to assist farm families in their decision making. Several states are cooperating (again with help of NCCI) to develop a computer program that asks the question "Does off farm work pay off?" -- and if so, for whom? An emphasis on evaluating the possibility of starting a home based business exists in many states. Especially noteworthy is Missouri's "Alternatives for the 80's" multi-disciplinary project which looks at developing alternative and supplemental income sources for rural families and communities. Educational support and networking systems are being developed to assist independent, creative, self-directed persons who want to establish income producing businesses at home.

It is clear to me, in my work in Wisconsin and with the Family Resource Management Specialists across the Midwest, that the current challenge in working with farm families in financial stress offers us an opportunity to build new tools and to bring a unique perspective to these problems. I have heard too often family living expenses referred to as the leftovers from the farm business accounts. I believe that we have a responsibility to help our colleagues and our clientele place greater emphasis on the family. The family needs to be aided in discovering its goals and its alternatives independent of, but related to, the farm or other business situations.

The family needs to consciously decide whether maintaining the farm is their explicit primary goal. In these times, that goal is too often assumed as the driving force in our support efforts. We need to be supportive of families in the wide variety of alternatives for generating income and spending it in ways they choose. Our longrun contribution must be measured by our impact on aiding family decision making, and not on how many farms we saved.

DIETARY GUIDELINES--SPREADING THE WORD
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The Federal Government's Role

Dietary guidance is not a new topic for USDA. Recommendations about what you should eat to be healthy date back to 1894 when W.O. Atwater suggested diets in USDA bulletins based on content of protein, fat, and mineral matter.

Our message has changed as scientific knowledge has increased and our food supply and lifestyles have changed. In 1980, the U.S. Department of Agriculture (USDA) and the Department of Health and Human Services (DHHS) published "Nutrition and Your Health: Dietary Guidelines for Americans." These guidelines and the accompanying text, which gave the reasons for them and some tips on how to follow them, have been revised and the second edition of the Dietary Guidelines was released on September 24, 1985. The guidelines are:

- Eat a Variety of Foods
- Maintain Desirable Weight
- Avoid Too Much Fat, Saturated Fat, and Cholesterol
- Eat Foods with Adequate Starch and Fiber
- Avoid Too Much Sugar
- Avoid Too Much Sodium
- If You Drink Alcoholic Beverages, Do So in Moderation

These guidelines are typical of earlier USDA guidance in that they are straightforward and simple in presentation. In addition, they are for healthy people who want to reduce risks of nutritional deficiency diseases and of certain chronic diseases. They do not replace prescribed diets. The guidelines are meant to be applied together to form a good diet. Because the guidelines refer to the total diet, they do not suggest that any single food or group of foods be eliminated. They emphasize variety, balance, and moderation. And they are not quantitative, but general and directional in approach.

On November 20, 1980, the Senate Appropriations Committee stipulated that a Dietary Guidelines Advisory Committee be established to review the original USDA/DHHS Dietary Guidelines. The Committee was to make any recommendations deemed appropriate. Such a review was desirable because of the intense interest in the information and because of continued advances in nutrition knowledge.

The Committee was composed of nine members appointed by the Secretary of Agriculture--three representatives of DHHS, three representatives for USDA and three selected from a list of nominees recommended by the National Academy of Sciences. The Committee was chaired by a member appointed by the Secretary of

Agriculture, and the Administrator of the Human Nutrition Information Service was the Executive Secretary.

The Committee members were: Dr. Bernard Schweigert of the University of California at Davis, Chairman; Dr. Henry Kamin, Duke University; Dr. David Kritchevsky, Wistar Institute; Dr. Robert Levy, Columbia University; Dr. Sanford Miller, U.S. Food and Drug Administration; Dr. Robert Olson, University of Pittsburgh; Dr. Lester Salans, National Institutes of Health; Dr. Fredrick Stare, Harvard University; and Dr. Judith Stern, University of California at Davis.

The Committee held 4 public meetings over its 2 year existence. The Committee reviewed and discussed new research findings since the 1980 guidelines. They also considered all public comments the Departments had received on the Guidelines. They made recommendations in a report to the Secretaries of USDA and DHHS on April 10, 1985, that included specific revised wording for the Dietary Guidelines bulletin.

They suggested that USDA and DHHS revise the Guidelines according to the Committee recommendations and that they publish and widely distribute them; the guidelines be used in nutrition education programs for the public; the guidelines provide the basis for developing food guidance that reflects available food supplies and food habits of Americans; and the guidelines be reviewed by Advisory Committees convened every 5-10 years.

The Committee recommended that the guidelines be retained much as published in 1980. They introduced a statement about the general excellence of our food supplies and the nutritional health of Americans. In addition, they suggested that the text describing the guidelines be revised in the following ways:

- Highlight the first two guidelines on variety and weight maintenance as the framework for a good diet; and show that the other five guidelines describe special characteristics of a good diet;
- Suggest that megadoses (large dose supplements) of any nutrient be avoided;
- Note the special problems of drug/nutrient interaction;
- Discontinue use of the term "ideal weight" because "ideal" weight is difficult to define;
- Revise height-weight and energy-activity tables;
- Discuss hazards of inducing vomiting and other extreme means of losing weight.

They recommended that the guidelines--

- Add excess calories as a factor in increasing blood cholesterol;
- Suggest moderation in the use of egg yolks, not eggs;
- Define dietary fiber and recommend a variety of food sources of fiber;
- Make clear that sugar as referred to in the guidelines isn't only "sucrose" but other kinds of caloric sweeteners as well;
- Note that starch, as well as sugar, appears to increase dental caries;
- Note usefulness of salt as a preservative;
- Revise the estimate of the prevalence of elevated blood pressure to "one in four adults;"
- Change "If you drink alcohol" to "If you drink alcoholic beverages;"
- Emphasize need for pregnant women to refrain from drinking alcoholic beverages;
- Insert the caution: "If you drink, do not drive."

Both USDA and DHHS support the recommendations of the Dietary Guidelines Advisory Committee. The second edition of the guidelines reflects the recommendations of the Committee and review by nutrition scientists in both Departments. The guidelines will provide the basis for dietary guidance information for the public from both Departments.

USDA and DHHS have printed over 2 million copies of the Dietary Guidelines. Also, copies for reproduction in full color and in black and white are available through USDA's Office of Governmental and Public Affairs, Washington, D.C. 20250. Food industry groups and others are encouraged to print and distribute copies.

USDA is providing copies free while supplies last through the Consumer Information Center, Pueblo, Colorado. The bulletin is being translated into Spanish. Copies of the Spanish version will be available in early 1986.

Already the second edition of the Dietary Guidelines publication has received a lot of interest and support from the general public, the food industry, and professional societies. For example, the publication was enthusiastically received at our exhibit at the 1985 American Dietetic Association annual meeting in New Orleans. The Society for Nutrition Education has issued a statement in support of the Dietary Guidelines. They were pleased to see that

the second edition of the Guidelines retained the general format of the first edition. The Society believes that the Dietary Guidelines include the basic principles that people need to consider in dietary planning.

Because the same seven guidelines have been retained in the second edition, we can continue to use many of the dietary guidance materials and nutrition education approaches we have used in the past. Most of USDA's dietary guidance emphasizes the importance of the whole diet.

Food published by USDA in 1979 is a colorful example of dietary guidance featuring balance and moderation as characteristics of a nutritious diet. This was a "new look" bulletin for USDA. It presents the "Hassle-Free Guide to a Better Diet," very similar to the basic four which had been used since the 1950's. It illustrated the first guideline--Eat a variety of foods.

Ideas for Better Eating, published in 1981, gives specific information on implementing the guidelines. It provides recipes which incorporate the guideline principles, giving special consideration to calories, sugar, fat, sodium, and fiber.

The USDA family food plans, which were revised in 1983, control fat, cholesterol, sugars and sodium at moderate levels and provide recommended amounts of vitamins and minerals. The least costly of these food plans is the thrifty food plan used by the Department as the basis for benefits in the Food Stamp Program. It was the focus of a Making Food Dollars Count Campaign in 1983 targeted to community leaders who work with low-income people. A new bulletin, in press, helps a "mature" couple to plan, buy for, and prepare low cost meals. It's called, "Thrifty Meals for Two: Making Food Dollars Count," Home and Garden Bulletin No. 244.

In another activity, our staff cooperated with the American Red Cross in developing a six-session nutrition course that focuses on implementing the Dietary Guidelines and other timely nutrition messages. This course, "Better Eating for Better Health," is being offered by Red Cross chapters across the country. The course provides information and activities that help participants put the guidelines into practice. A comprehensive evaluation of a sample of over 1,000 participants showed improved nutrition knowledge, attitudes, and behavior.

In conjunction with a Food and Fitness Campaign of 1983, we developed a 1/2-hour videotape entitled "Inside/Out (This is Your Body Talking)." This tape, which stresses the importance of food and fitness to the health of the general public, has been used nationwide by Extension leaders and others. It is also being used internationally.

A major project is underway to prepare additional interpretative materials relating to the revised Dietary Guidelines. HNIS staff, with advice from the Extension Service, is developing a series of 14 minibulletins in support of the Dietary Guidelines. The bulletins will provide specific information to help the public put the Guidelines into practice.

The bulletins will be issued in two sets of seven each. Each of the seven bulletins in the first set focuses on one of the seven guidelines. Each includes an introduction reminding readers that the bulletin provides in-depth information on just one guideline and that all guidelines should be considered to select a healthful diet. Each bulletin provides food composition information and specific suggestions on implementing the guideline in food planning and preparation; recipe ideas considering all the guidelines issues (lower fat, lower sugar, lower sodium, increased starch and fiber); and a self-assessment activity or knowledge quiz to involve readers with the information and encourage them to apply it to their own food practices. The first set of bulletins has been widely reviewed by professionals in USDA's Extension Service, Agricultural Marketing Service, Food Safety and Inspection Service, Food and Nutrition Service and in the Department of Health and Human Services and universities. Design work is currently underway.

The second set of seven bulletins will provide suggestions for using the guidelines together in specific activities such as shopping for food, planning meals, preparing food, eating out, making bag lunches, making quick meals and choosing desserts and snacks. They will include sample menus, recipes and references specific to each topic.

The target audience for these publications is the household food manager--the person who plans, purchases, and prepares food for the household. Educators, such as Extension Agents, may use the material in group settings, or household food managers may use them individually.

Each bulletin will be 4 to 12 pages long. The text of the bulletins will be enhanced by color and line drawings, simple tables, and stylized type for key headings. A graphic logo will relate the bulletins to the Dietary Guidelines publication. The bulletins will feature a "centerspread" symbol that emphasizes the need to use all of the Guidelines in selecting a diet.

In developing the bulletins, particular attention is being given to the type and format of information, based on results of our research on effective strategies for communicating nutrition information to household food managers. Research with the Department of Communications at Stanford University, and at the Pennsylvania State University, the evaluation of the American Red Cross nutrition course, and other research provide the rationale for the communication style of these publications. To illustrate, these researchers showed self-assessment activities to be helpful in providing a basis for making a decision to change food practices. Thus, self-assessment measures were used in the bulletins.

We expect the first seven minibulletins to be published within 2-3 months and the next seven later in 1986. Information copies of these will be available for Extension agents and other food and nutrition educators. They will be available for sale as two packets (the first seven and the second seven) by the Government Printing Office. Copies for reproduction will also be available.

In the past, USDA has published some nutrition education materials that have featured particular aspects of diet. In the 1960's, we addressed the problem of maintaining desirable weight, in a bulletin for consumers, Food and Your Weight. In 1968, we published a pocket calorie guide. This guide has been revised twice and is in the process of being revised again. It is one of our most frequently requested publications.

USDA also prepared "Food 2: A Dieter's Guide," which was published by the American Dietetic Association in 1982. It covers these points for consumers:

- How you know if you are overweight and/or overfat
- What happens to your body when you lose weight
- Tips on adjusting eating and activity habits
- How to get a balanced diet
- Low calorie ideas for meals, snacks, and special occasions
- Over 40 recipes
- Comments about weight-loss diets.

Most of the guidance USDA provides is general and directional rather than quantitative in nature, like the Dietary Guidelines. Food guides suggest groups of foods to select from to provide a good diet. They do not suggest exclusion of any foods from the diet, but indicate the types of foods to emphasize and de-emphasize. An example of this type of information is Food 3: Eating the Moderate Fat and Cholesterol Way, prepared by USDA and published by the American Dietetic Association.

There is one notable exception: The USDA family food plans at four cost levels. These food plans suggest specific quantities of all foods needed for nutritious diets for men, women, and children of different ages. It is important that all foods, including fats and sugars be included here because the cost of food in the food plan is used as a national standard of reasonable food cost for families of different compositions. For purposes of revising these food plans in 1983 (and not necessarily for other purposes) we defined moderate levels of fat as no more than 35 percent of calories. Cholesterol was limited to 350 mg per person. These levels are considered to be moderate. They are a little higher than some authorities suggest, but lower than Americans ordinarily consume. Their implementation would be expected to represent improved, if not optimum, levels.

In 1982, FDA and Agriculture's Food Safety and Inspection Service sponsored a consumer education campaign about sodium. A booklet, "Sodium--Think About It," was published and distributed free. The "Sodium Content of Your Food" published by HNIS in 1980 is a good source of information for consumers. Revised HG 72, Nutritive Value of Foods, has just been released. This publication now contains values for sodium and cholesterol, as well as updated

information on fat, fatty acids, carbohydrate, and selected vitamins and minerals.

To aid in assessment of diets and in the development of food selection guidance materials, USDA develops extensive information on the nutrient content of foods. This is available in machine readable form and in Agriculture Handbook No. 8, which is being revised in sections by food group.

The Nutrient Data Base for Standard Reference, available from the National Technical Information Service in machine readable form, is our most up-to-date and comprehensive food composition data base. It incorporates the changes made in the revised sections of AH-8. This tape contains imputed values where values are not available from analytical data for publication in AH-8 and its revised sections.

We are concerned about the needs and problems of nutrient data users. For the past 9 years, annual Nutrient Data Bank Conferences have helped us to understand these needs and accommodate in the best way possible. The 1985 conference was held in San Francisco and the 1986 conference is planned for Athens, Georgia, next summer.

To help people implement the Dietary Guidelines, we need to know what dietary changes will move people in the right direction. The changes suggested should be worth making; and they should be practical or they will not be accepted. To develop this type of guidance information for the public, we need to know what people are eating. Through our nutrition monitoring efforts we collect information about the dietary and nutritional well-being of the population. HNIS monitors the dietary status of the population at three levels--food in the U.S. food supply, food brought into and used by the household, and food eaten by individuals.

This past April, the Continuing Survey of Food Intakes by Individuals (CSFII) was initiated by HNIS. This survey will provide continuous data on food eating practices and dietary adequacy of the general population and groups at nutritional risk and up-to-date information on food consumption practices. It will help us monitor eating behavior relative to the guidelines. The primary focus of this survey is a nationally representative sample of women 19-50 years of age and children of those women who are 1-5 years of age. Over a one year period, we will collect six 24 hour recalls of food intake for each participant in order to measure usual intake. Results from the first day's recalls in Spring 1985 are compared with a day's recalls in Spring 1977 (collected as part of the Nationwide Food Consumption Survey 1977-78). These are presented in the first Continuing Survey report, which will be out within a month. We plan to present some of this information as it relates to the Dietary Guidelines at the Society for Nutrition Education meeting which will be here in Washington next summer.

We are presently making plans for the more comprehensive decennial Nationwide Food Consumption Survey (NFCS) in 1987 which will provide data on food used in households and food eaten by individuals. These measures will give us further insight into ways in which the American diet is changing. We look forward to

studying the changes in nutrient intake since the 1977-78 NFCS relative to the guidelines.

Other Federal agencies are involved in activities related to the Dietary Guidelines. For example, the Department of Health and Human Services is currently evaluating uses of the first edition of the Dietary Guidelines, of which over 7 1/2 million copies have been distributed since 1980. The study describes how the Dietary Guidelines have been used and the perceived influence they have had in the public and private sectors based on questionnaires to about 1,200 individuals--1,000 from the public sector and 200 from the private sector. The information will provide documentation for program administrators on the uses of the Dietary Guidelines. Also, this information will provide technical assistance for potential revisions, and will be useful in improving the distribution of the guidelines, and other nutrition education materials.

Elizabeth Brannon presented some of the preliminary findings of the study at the annual meeting of the American Dietetic Association. The Dietary Guidelines were found to be used most often with the general adult population and with the elderly. In addition to use with clients of public sector food, nutrition, and health programs, the Dietary Guidelines were used widely in educating other personnel including classroom teachers, food service workers, and allied health professionals. The public sector was more likely to disseminate the publication by handing out copies, whereas the private sector was more likely to incorporate the content into other materials/media. Additional results from the study will be forthcoming, but these results indicate that the Dietary Guidelines have become an important reference and resource for both the public and private sectors. They have been used extensively in nutrition education and have had an impact on food available to us.

Another Government activity is the National Cholesterol Education Program of the National Heart, Lung, and Blood Institute (NHLBI) which is in the planning stages. The mission of this program is the reduction of coronary heart disease morbidity and mortality attributed to elevated blood cholesterol. It is a national educational effort of NHLBI in cooperation with other Government agencies and selected professional groups in the private sector. Several planning workshops have been held to identify program elements and develop implementation strategies to reach defined target audiences or settings. These workshops addressed professional and patient education, public education, worksite programs, and school and youth. Results of the workshops have been released and planning of program efforts is continuing.

As you can see, there are a number of projects either presently underway or planned for the future that relate to spreading the word about the Dietary Guidelines. But Federal promotion is not sufficient. Nutrition educators, other health professionals, the food industry, and the media play a vital role in communicating the Dietary Guidelines messages to the public. We believe the Guidelines provide a solid basis for dietary advice to the general public that we can all support wholeheartedly. We hope you will help in spreading the word by promoting the nutrition messages of the "Nutrition and Your Health: Dietary Guidelines for Americans."

DIETARY GUIDELINES -- SPREADING THE WORD
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Home Economics and Human Nutrition
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Annual Agricultural Outlook Conference
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For Release: December 4, 1985

Cooperative Extension Service's Role

The Cooperative Extension Service (CES) is a vast partnership made up of local residents, the 73 State Land Grant institutions throughout the U.S. and its territories, the U.S. Department of Agriculture and the more than 3,000 county governments. All these groups share in planning, financing and operating Extension programs. The partners in the CES system are interdependent yet each has considerable autonomy in funding, staffing, and programming.

The Extension education program is unique in several ways. For example, if we consider that formal education is like a pipeline, i.e., the instructor delivers information in a straight line fashion to the user, then the CES nutrition education model would be in a shape as a funnel. The State specialists often take national objectives to develop practical information and educational programs based on local and state needs. Research generated information is transmitted to the counties through staff training or other means. County agents (Home Economists) often teach lessons to "leaders," or volunteers who in turn transfer the information to the other ultimate user. Thus an educational program can reach multipliers of audience in a relatively short time. In addition, specialists and county Home Economists may choose to use media (newspaper, radio, television) or direct teaching to groups of consumers or other professionals or other means to disseminate information to the public.

Our clientele has more input regarding their needs. They express their interest and concerns via County program planning advisory boards. Together with input from individual county Home Economists and State specialists, counties in the Extension system sets their curriculum. Organizations such as hospitals, schools, Senior Citizen Centers, etc. and Rotary club, Kiwanis, Lion's club etc. often request nutrition programs and/or information for their clientele and members.

Even though the half million organized volunteer Homemakers have been a traditional Extension audience, and leader/multiplier an equal number of clientele of so called, "special interest groups" have been reached every year without counting the 4-H Youth, EFNEP, and audiences reached via mass media. Intensified efforts in outreach, target toward men, young homemakers, retirees and employed women are in progress. Programs for special group of people such as the military families have also been explored.

At times it is a challenge to balance providing information and programs based on national objectives with local and state perceived needs. The Dietary Guidelines for Americans per se was poorly understood and not well-received by some audiences/clientele in a few states in 1980, even though the CES has delivered programs based on the same nutrition principles for decades, e.g. Eat a Variety of Food in Moderation, Maintain Reasonable Weight etc.

Since 1982, however, growing interest in these guidelines has spread throughout the United States. Several states in their plan of work have listed the implementation of Dietary Guidelines as one of their major program emphases or activities. Such support is anticipated to increase even more in the months and years to come.

Education materials developed by individual States relative to the Dietary Guidelines for Americans are catagorized under the following headings:

- o General Dietary Guidance
- o Eat a Variety of Foods
- o Maintain Desirable Weight
- o Avoid Too Much Fat, Saturated Fat, and Cholesterol
- o Eat Foods with Adequate Starch and Fiber
- o Avoid Too Much Sugar
- o Avoid Too Much Sodium
- o If You Drink Alcoholic Beverages, Do So in Moderation
- o Nutrition for Ethnic Groups

Table 1. General Dietary Guidance
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Health Test	Factsheet	SC
Nutrition Primer	Factsheet	AL
For The Health of It	A Series of 7 Factsheet	GA
Nutrition and Your Health: Dietary Guidelines for Americans	Slide/Tape Packet	AL
The Good Life	Slide/Tape	IN
Mission: Nutrition	8 Video Shows	AK
Lifestyles	Computer Program	WV
Health Hazard Appraisal	Computer Program	IN
Nutri fit	Computer Program	CO
RCALL	Computer Program	FL
Dietcheck	Computer Program	NE
LEAN	Computer Program	MN
FOINANA	Computer Program	MN
Nutri II	Computer Program	IN
Nutrichat	Computer Program	MO
Dietary Guidelines	Skit	HI
Good Health begins with Exercise	Calendar	VA
Nutrition Today: Selecting and Altering Foods and Recipes for Good Health	Slide set/Lesson Materials	IL
The Wellness Lifestyle Lesson		SC
Light-Learn Nutrition Quiz Board	Light-up Board	AL
Lifestyles-Fitness 7, Nutrition, Stress, Exercise, Sleep, Weight, Alcohol, Tobacco	Seven Lessons	AL

Table 2. Eat a Variety of Foods
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Controling Food Cost (Dietary Guidelines Perspective)	Factsheet	CT
Vitamin and Mineral Supplements	Factsheet	VA
Nutrition-Fitness; A Winning Combination	Factsheet	AZ
How Can I Eat Better...Now?	Factsheet	CA
Trace Elements	Factsheet	IN
Vitamins in Your Diet	Factsheet	KY
A Guide to Good Nutrition: The Choice is Yours	Factsheet	MD
Nutrition for the Athlete	Factsheet	OK
Health Promotion through Risk Appraisal	Factsheet	PA
Nutrition in the Life Cycle	Factsheet	AR
Eater's Almanacs	Factsheet (10)	GA
Nutrition and Exercise for the Athlete	Factsheet	NY
Moving Toward Fitness	Factsheet	NY
Eat Right for Life	Factsheet	NC
The Daily Food Guide Way to Food and Fitness	Factsheet	ND
Water-Soluble Vitamins	Factsheet	CO
Nutrients and Teamwork is the Key	Factsheet	MS
Nutrition Concepts Definitions: A Guide to Good Understanding		
Food and Fitness: The Daily Food Guide Way	Factsheet	MO
Nutritious Eating on the Go	Factsheet	ND
Do You Need Vitamin and Mineral Supplements?	Factsheet	ND
Food Nutrients for One or More	Factsheet	TN
Staying Healthy	Factsheet	TN
Developing Healthy Habits	Factsheet	TN
Nutrition Strategies--For Adults Only	Factsheet	WI
Food and Fitness	Factsheet	WI
Troublesome Two: some food and Drug Interaction	Factsheet	AZ
Mixing Foods & Drugs: How the Two Interact	Factsheet	KY
Calcium	Factsheet	IL
Trace Elements	Teaching Packet	KS
Dietary Interrelationships	Teaching Packet	TX
Feeling Good Through the Years: Nutrition for Women	Teaching Kit	NH
A Message on Minerals	Lesson	WI
Take Care of Your Health	Lesson	WI
Basic Food Groups	Lesson Kit	ID
Three Steps to Fitness	Slide/Tape, Lesson	TN
NutriGuide and Menu Planner	Book	CO
Health Risk Appraisal	Computer Analysis	AL

Go for Health: Change Your Mind About Your Body	Booklet	PA
Food Ways to Better Health: A Food and Nutrition Program Guide for County Extension Agents	Notebook/ Resource Book	GA
Modified Diet Training Notebook	Resource Book	GA
Trace Elements	Slide/Tape,	IN
What Should You Eat to Stay Healthy?	Slide/Tape	CA
Nutrition in the Fast Lane (athletic)	Slide/Tape, Script, Factsheet	OR
Food and Fitness Program	Computer Program	ID
Nutrition - Knowledge	Computer Programs -- set of 5	IN
Diet Right	Computer Program	GA
CHEW: Choose Health, Eat Wisely	Computer Program	PA
Hablemos de Nutrition	Monthly Periodical	PR
Professional Perspectives	Periodical (9/yr)	NY
The Nutrition Letter	Periodical (4/yr)	PA
Health and Fitness Quarterly	Newsletter (4/yr)	IL
Don't Let Your Diet Let You Down (Athletes)	Circular	IL

INFANT/MATERNAL

Nutrition for a Healthy Pregnancy	Factsheet	AL
Nutrition for a Teen-Age Mother-To-Be	Factsheet	AL
Baby Formula and Baby Food	Factsheet	AL
Nutrition during Pregnancy	Factsheet	AR
Nutrition For the Nursing Mother	Factsheet	AL
Infant Nutrition Six Months to One Year	Factsheet	AZ
Infant Nutrition Birth to Six Months	Factsheet	AZ
Nourishing for Two	Factsheet	AZ
Making Baby Food	Factsheet	CO
Feeding Your Baby--The First Year	Factsheet	GA
Feeding Your Baby--Making and Storing Baby Food	Factsheet	GA
Feeding Your Unborn Baby	Factsheet	GA
Feeding Your Baby from birth through the First Year	Factsheet	MS
Lactancia	Factsheet	PR
La Alimentacion de su Bebe en el Primer Ano de Vida	Factsheet	PR
Formula Infantil . . . Preguntasy Respuestas	Factsheet	PR
Introduction of Solid Foods to Infants	Factsheet	CO
Eating for a Healthy Baby	Factsheet	MO
Breastfeeding vs. Bottle Feeding	Factsheet	AL
Nutrition During Pregnancy	Factsheet	AR
Breast Milk or Milk Formulas	Factsheet	AR
What to Feed Babies after Milk	Factsheet	AR
Making Baby Foods at Home	Factsheet	AR
Nutrition During Lactation	Factsheet	AR
Better Health for Your Baby	Factsheet	OH
Kids and Food	Factsheet (4)	IN
Maternal, Infant, and Child Nutrition	Resource Book	NC

Maternal and Infant Nutrition Notebook	Resource Book	GA
The Basics of Breastfeeding: A Mother's Guide	Pamphlets (6)	NY
The Next Nine Months: Nutrition and You	Newsletters (6)	OK
Nutrition & Pregnancy	Letter Series	OR
Nutrition for the Teenage Mother-To-Be		
Nutrition for Young Children	6-part Course,	CT
Preschooler and Food	Correspondence	IN
Eating Right During Pregnancy	Circular	IL

YOUTH

Fruit Is Good For You	Factsheet	AL
Vegetables Are Good For You	Factsheet	AL
Customize Your Diet for Your Body Design	Factsheet	AL
Customize Your Diet for Your Kind of Fitness	Factsheet	AL
Customize Your Diet --Are Food Fads in Tune with Your Style	Factsheet	AL
Calcium	Factsheet	AL
Vitamin C	Factsheet	AL
Vitamin A	Factsheet	AL
Protein	Factsheet	AL
Iron	Factsheet	AL
Fats and Carbohydrates	Factsheet	AL
Water	Factsheet	AL
Mini-Minerals	Factsheet	AL
Nutrition and Drugs	Factsheet	AL
Nutrition and Pregnancy	Factsheet	AL
B Vitamins	Factsheet	AL
Food for Fitness	Factsheet	AL
Stress and Fitness	Factsheet	AL
Physical Fitness for Total Fitness	Factsheet	AL
Snack Facts	Factsheet	CT
Eating for Health and Fun	Factsheet	MI
Feeding Children One to Six	Factsheet	MS
Alimentos para el Nino de 1-5 Anos	Factsheet	PR
Adolescent Eating Disorders: Anorexia and Bulimia Parts I & II	Factsheet (2)	MO
The Dietary Needs of Teenagers	Factsheet	MD
Feeding Your Preschool Child	Factsheet	ND
Nutrition for the Teen Years	Factsheet	ND
Health Connection	4-H Lesson	CA
Rate Your Plate	Activity Book	CA
Nutrition for the Now Generation	Lessons (10)	NC
What Should I Feed My Preschooler?	Lesson	MS
It's Your Move	Lessons (7)	NY
Motion for Life	Lessons (12)	NC
Cook-It, Meatless Meals, Milk, Vegetables Fruits, and Meat & Putting It All Together	6 Lessons	AL

The Fitness Factor	4-H Lesson Series	LA
Nourishing and Nurturing Two-Year-olds	Teaching Kit	NY
Target 12	Lessons (12)	OK
Nutrition for Young Children and Their Families: A Guide for Teachers, Parents, and Caregivers	Notebook	FL
Growth of the Preschool Child The Preschooler's Diet; Development of Food Habits; Nutrition and Dental Health; Overweight/Obesity in the Preschool Child; Iron Deficiency in Preschoolers	6-Part Course, Correspondence	VA
Eating Behavior Values	Lessons (9)	CT

ELDERLY

Good Nutrition During the Later Years	Factsheet	MD
Food, Medicine and You	Factsheet	IN
A New Twist To Living	Factsheet	AL
Good Food on A Budget in Leisure Years	Factsheet	AL
Nutrition for the Later Years	Factsheet, Lesson	WV
3 Score +	Newsletter (4/yr)	IN
Nutrition for Seniors	18-Lesson Kit	NJ

Table 3. Maintain Desirable Weight
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Weight - Fitness 7	Factsheet	AL
Trim and Slim Weight Reduction Program		
1200 Calorie Diet		
1400 Calorie Diet		
1600 Calorie Diet		
1800 Calorie Diet		
2000 Calorie Diet		
Diet Plan		
Record and Analyze Eating Habits		
Shape Up While You Trim Up		
Change Your Behavior to Control Weight		
The Truth About Weight Control Myths		
Calories and Weight		
Weight Control Gimmicks, Gadgets and Devices	Factsheet	AL
Eating Disorders	Factsheet/Slides Tape	AL
Fad Diet and Diet Aids	Factsheet/Slides Tape	
Winning at Losing Forever	Factsheet	MT
Nutrition and Physical Fitness	Factsheet	VA

Weight-Control Diets, Using Exchange Lists	Factsheet	TN
Overweight/Obesity in the Preschool Child	Lesson	VA
Weight Control	Learn-at-Home	PA
Rating Your Diet	Teaching Kit Lesson	ID
Slimming-Only Sensibly (SOS)	8-part Course, Correspondence	WV
Losing Weight with a Little Help from My Friends	4-H Leader Guide, Member Manual	CA
Camp Countdown	Teen Weight loss Camp Brochure	GA
Ideal Weight	Computer Program	WI
Winning By Losing	15 Session Group Meetings	IL
Slim Lines	Newsletter Series (10)	WI
"Weighing" the Reducing Diets	Leaflet	OH
Three Steps to Fitness	Slide/Tape	TN
Lower Calorie/Higher Calorie: The Four Food Groups	Pictorial Leaflet	CT
Nutrition and Exercise for Fitness and Weight Control	Circular	IL

Table 4. Avoid Too Much Fat, Saturated Fat, and Cholesterol Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Fats and Cholesterol	Factsheet	AL
Nutrition-Fitness: A Winning Combination	Factsheet	AR
Carbohydrates-Fiber Starch and Sugar	Factsheet	KS
Fats in the Diet	Factsheet	CO
Healthy Heart Facts: Fat Facts Eating Less Fat, Cholesterol, Saturation Facts	Factsheet (4)	CO
Altering Recipes for Health	Factsheet	IA
Cholesterol and CV Health	Factsheet	KS
Dietary Fats and Health	Factsheet	MN
Fats and Your Health	Factsheet	NC
Fat & Cholesterol in Your Diet	Factsheet	KY
Fat & Cholesterol in Your Diet	Factsheet	IL
Winning By Losing	15 Session Group Meetings	IL
Slim Lines	Newsletter Series (10)	WI
"Weighing" the Reducing Diets	Leaflet	OH

Three Steps to Fitness	Slide/Tape	TN
Cooking for Good Health Low Sodium, Low Fat, and Low Sugar Recipes	Training Manual	OH
Creative Vegetable Cookery	6-Part Course, Correspondence	PA
Cholesterol	Lesson	WI
Heart Disease: You Can Do Something About It	Slide/Tape	IA
For Wellness: Less Salt		

Table 5. Eat Foods with Adequate Starch and Fiber
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Carbohydrates	Factsheet	AL
Vegetarian Diets	Factsheet	AL
Vegetarian Diets	Factsheet	CO
Vegetarianism	Factsheet	AZ
Using and Storing Carrots, Apples, Cabbage, Dried Beans and Peas, Potatoes	Factsheets (5)	MI
Unsweeten Your Life	Factsheet	ID
Starch and Fiber in the Diet	Factsheet	IL
Cooking for Good Health	Training Materials	OH
Dietary Fiber	Lessons (4), At-Home	PA
Carbohydrates: The Inside Story	Bulletin	NY
Creative Vegetable Cookery	6-Part Course, Correspondence	PA

Table 6. Avoid Too Much Sugar
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Altering Recipes for Health	Factsheet	IA
Low Sugar-Processed Fruit	Factsheet	PR
Sugar & Other Sweeteners in Your Diet	Factsheet	KY
Altere las Recetas para su Salud	Factsheet	PR
Sugar in the Diet	Factsheet	IL
For Wellness: Less Fat, Less Sugar, Less Salt	Lesson	ND
Sweets in Our Life	Lesson	WI

Table 7. Avoid Too Much Sodium
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Sodium and Potassium	Factsheet	AL
Altering Recipes for Health	Factsheet	IA
Salt and High Blood Pressure	Factsheet	MN
Low Sodium, Low Fat, and Low Sugar Recipes	Factsheet	PR
Shaking the Salt Habit	Factsheet	ID
Sodium & Potassium	Packet	NY
Cooking for Good Health	Training Manual	OH
Using Salt Sparingly	Training Guide	WI
Heart Disease: You Can Do Something About It	Slide/Tape	IA
For Wellness: Less Fat, Less Sugar, Less Salt	Lesson	ND
Sodium & Potassium	Leaflet	AL
Pass the Salt	Exhibit	OK

Table 8. If you Drink Alcoholic Beverages, do so in Moderation
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Alcohol Ups and Downs	Factsheet	AZ
The Fetal Alcohol Syndrome	Factsheet	ND
Salt & Sodium in Your Diet	Factsheet	KY
Alcohol & Pregnancy - They Don't Mix	Factsheet	OH
Alcohol & Pregnancy	Lesson, Visuals,	LA
Eating For Two -- Your Baby and You	Newsletters (3)	NC
Nutri I -- Sodium	Computer Program	IN

Table 9. Nutrition for Ethnic Groups
Cooperative Extension Service Education Materials

TITLE	FORMAT	STATE
Altere las Racetas para so Salud	Factsheet	PR
Food Groups (Chinese)	Factsheet	CA
Laetancia (Spanish)	Factsheet	PR
La Alimentacin de ser Bebe en el Primer Ano de Vida (Spanish)	Factsheet	PR
Formula Infamtil Preguntasy (Spanish)	Factsheet	PR
Hmong Refugee Program: 12 Need Food and Nutrition Curriculum (Laotian/English)	Lesson (12)	CA
New Life in a New Land (Vietnamese/English)	Packet	IN
New Life in a New Land (Vietnamese/English)	Slide/Tape	IN
Food and Nutrition (Chinese)	Newsletter	CA

I'd like to highlight a few of these methods or materials used in "Spreading the word" relative to Dietary Guidelines.

Factsheets are popular as handouts for lessons or for distribution at malls, fairs and other public gathering places. The Dietary Guidelines pamphlets are often distributed after a meeting or lesson.

The eight For the Health of It series used the seven guidelines plus exercise as topics, and expanded the information to include practical tips for the consumer. For example in the Less Sugar For the Health of It a granola bar is used to illustrate the different types of sweeteners it contains and how to locate these ingredients from the label. Tips for reducing sugar in food preparation are also included.

When the 14 mini lessons of Dietary Guidelines produced by HNIS become available, they will certainly complement many of the programs, factsheets or slide sets developed by states very well.

Telenet which are two-way audio and/or two-way audio and one-way video devices are used often to reduce travel and improve Specialist's outreach in the State. In some states specialist can reach 600 or more people from 20 or more counties in one session without leaving the campus where they usually are stationed and the audience would not need to travel more than 15 miles in most cases. Local agents provide back up support and information requested on site or later as questions arise.

Microcumputers or terminals are valuable tools to help the consumer relate their individual foods intakes to dietary guidelines. They are particularly useful to reach male audiences.

Adapting any new information or knowledge to local need and interest is a challenge with constantly changing solutions. Information regarding dietary guidance not only is available in Spanish, Chinese, Laotian and Vietamese to meet the needs of some of our ethnic groups, but also takes into account cultural and other differences. For example, a Los Angelos county nutritionist said, " I teach my clientele to eat milk (not to drink milk) because milk incorporated in foods seems to have no ill effect relative to lactose intolerance."

Because of the harsh weather in Alaska, Specialists there exerted special efforts to develop audio visual materials. Eight 30-minute video programs were produced based on the seven dietary guidelines and a summary. This "Taste" series has been broadcast on public television stations and the Learn/Alaska Network throughout the State of Alaska. It has been estimated that 43,000 people have seen one of the eight shows and remembered what they saw several months later.

Finally, on a much smaller scale a Home Economist has the dietary guidelines reproduced on her apron. Whether she gives lessons on food preparation, food preservation or nutrition, the Dietary Guideline message is visible.

In summary, CES uses a variety of methods to help our clientele maintain or improve their health through dietary guidance programs.

DIETARY GUIDELINES--SPREADING THE WORD

Susan T. Borra, R.D.
Manager, Consumer Information
Food Marketing Institute

Annual Agriculture Outlook Conference
Session #9, Washington, DC

For Release: December 4, 1985



Food Marketing Strategies

Consumers are interested in nutrition, diet and health. As the purchasing agent for the consumer, food retailers and wholesalers are monitoring this concern about nutrition through consumer research and responding with appropriate consumer information based on the Dietary Guidelines for Americans.

Our consumer research is conducted for us by Louis Harris and Associates. It is updated and published annually in Trends -- Consumer Attitudes and Supermarket. This research aids us in identifying consumer trends and prioritizing issues of concern that warrant action. The data for this year's survey were collected from 1,005 telephone interviews conducted from January 10 - 21, 1985. The sample was drawn from the civilian adult population of the United States, 18 years of age or older. The sampling procedure used provides a sample that reflects the total U.S. population.

For the past few years we have included questions to identify interest and concern an the part of the public about nutrition, food and health.

Shoppers expect a great deal from supermarkets, from quick checkout to a clean store. Thirty six percent of the shoppers also feel that it is the supermarket's responsibility to provide nutrition and health information. Of those who indicated that it is the responsibility of the supermarket to provide nutrition and health information, 72 percent said that they are doing a excellent or pretty good job of it.

We also asked how concerned they were about the nutrition content of the foods they eat, to which, 91 percent indicated that they were very or somewhat concerned. This overwhelming national concern with health and nutrition has been one of the strongest and most pervasive of all trends in food in recent years. Yet in 1985 we began to see some declines in this trend about concerns of the nutritional content of foods.

Last year 63 percent of all shoppers stated that they were "very concerned" about the nutrition content of what they eat compared to 59 percent this year. Also the 1985 Trends data indicated that concern about nutrition among men is dropping at a greater rate than females.

Despite these declines, overall concern is still extremely high at 91 percent very or somewhat concerned.

Shoppers were asked to indicate the extent to which they felt certain components in foods are hazardous. A substantial majority, almost three out of four shoppers, considers residues such as pesticides and herbicides to be a serious health hazard. Concerns about cholesterol declined a little while fats, surveyed for the first time this year, are perceived to be a serious health hazard by better than four in ten shoppers.

Concerns about salt in food and about additives increased slightly this year while sugar and artificial coloring continues to be viewed as the least hazardous items in food.

Also this year, we asked shoppers what foods they are eating and why they choose these foods.

When asked if there was a favorite main course item that is served for dinner once a week or more often, four out of ten indicated that they do not have a single favorite main course item. However, beef, at 22 percent, was cited as the predominant favorite, closely followed by poultry at 17 percent, then pasta at 8 percent.

Along the same vein, Trends also wondered what factors go into choosing main course items. The most common reason is taste, followed by ease of preparation, nutrition or health value and finally economy. In this survey, as well as others, nutrition has won out over price in food selection considerations.

As far as snack or treat favorites, almost half of all shoppers don't have a single favorite either. Of those who identified a favorite snack, 10 percent chose nuts, grains, and popcorn, which edged ice cream, fruits and vegetables, and chips and pretzels as snack favorites.

As with the main course, taste is cited as the number one reason for choosing the snack. Nutritional and health value rank over both ease of preparation and economy as the reason for choosing the favorite snack.

We also asked people what their major changes in household eating habits had been over the last year. A suprising 44 percent said "none." "Eating less red meat" and "eating more fresh vegetables" were tied for second at 9 percent each.

This year we also asked a series of questions designed to explore the types of practices consumer use to ensure the nutritional content of food. We found:

72% frequently serve nutritional snacks, such as fruits and vegetables;
70% frequently select foods to balance their family's diet;
45% frequently check food labels for protein and fat content;
40% frequently select recipes for their nutritional content;
35% frequently avoid buying products that have no nutritional information; and,
32% frequently read articles or books on nutrition.

Our consumer data gives us three good reasons to market nutrition in the supermarket. Over a third of our customers feel it is the supermarkets' responsibility to provide nutrition and health information; 91 percent of our customers are very and somewhat concerned about the nutritional content of the foods they eat; and, our customers tell us that nutrition and health value influences their choice of foods.

Supermarkets are helping to implement the Dietary Guidelines recommendations in a variety of ways, such as:

Distributing consumer brochures which cover topics such as sodium or weight control;

Providing point-of-purchase information on the calorie, sodium, fat, cholesterol and sugar content of food products;

Providing private label products which are low in sodium, sugar and fat;

Cooperating with health organizations and government agencies to develop special information campaigns on nutrition and health topics; and more.

As the purchasing agent for the consumers, food retailers and wholesalers will continue to respond to consumers concern about nutrition.

1986 OUTLOOK FOR FRUIT

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Producers, processors and agribusiness firms are facing several important problems which pose challenges to the future direction of the fruit industry. The problems are--recent freezes in Florida and Texas have destroyed a large amount of citrus acreage and damaged crops; the outbreak of citrus canker in Florida has resulted in a shortage of nursery stock so that the replanting of freeze-damaged acreage will be delayed; competition in the world market for fruit has increased, and oversupplies of some fruits have depressed prices. The challenges are whether to replant the freeze-damaged citrus acreage and pull-out some fruit and nut trees and grape vines in order to reduce supplies.

Despite these problems, cash receipts from fruit and tree nut sales continue to rise. According to the U.S. Department of Agriculture, 1984 cash receipts totaled $6.26 billion, up $239 million or 4 percent from 1983. With a relatively small 1985/86 citrus crop, grower prices for citrus are expected to remain relatively high. Contract prices for most canning noncitrus fruit were moderately to substantially higher in 1985 than a year ago. Despite the larger California grape crop, the field price for natural seedless raisins was also higher than last year. Smaller crops of apples and pears will keep grower prices above 1984. Consequently, prospects for relatively high prices will probably result in another increase in cash receipts during 1985/86. With the slow rate of increase in the costs of inputs, the fruit industry should have a profitable year.

Small supplies and stable demand should keep retail prices for most fresh and processed fruit relatively firm. However, with only a moderate increase in the cost of food marketing, consumers will pay moderately higher prices in 1986 than 1985. Supplies of most fruit should be adequate to ample in supermarkets.

GENERAL PRICE OUTLOOK

Since June, the index of grower prices for fresh and processing fruit has been sharply below last year due to lower prices of apples and oranges. The October index stood at 186 (1977=100), down slightly from September and 35 percent below a year earlier. Lower prices were indicated for grapefruit, oranges, and strawberries. The index is expected to decline further through the early winter because of seasonal increases in supplies of apples and citrus. However, noncitrus prices are likely to remain firm with smaller supplies of apples and pears and stable demand. Grower prices for fresh oranges are expected to average below last year's unusually strong prices because California navel orange supplies are expected to increase 15 percent

from last season. However, the smaller crop and rising demand are likely to keep lemon prices substantially above a year ago. Demand for grapefruit is likely to rise because movement of most processed products has been strong and ending stocks are below last season. Export markets for fresh grapefruit may improve somewhat if the U.S. dollar continues to weaken. So, grapefruit prices are likely to remain firm.

Table 1.--Index of quarterly price received by growers for fresh and processing fruit, 1983-86

Year	1st	2nd	3rd	4th	Annual average
		(1977=100)			
1983	126	127	110	125	122
1984	125	171	237	243	194
1985	187	179	181	186 1/	183 1/
1986 1/	171	174	189	193	182

1/ Estimated.
SOURCE: Agricultural Prices, SRS, USDA.

Wholesale prices of most canned fruit have been higher than a year ago. Although the canned fruit pack is expected to be down for some items, increased carryin stocks will result in larger supplies for some canned fruits. To stimulate sales, packers have reduced prices for some canned items. If demand does not improve substantially, larger supplies may weaken prices further.

Increased supplies of apples and oranges have weakened retail prices of fresh fruit. The BLS September consumer price index stood at 368.5 (1967=100), 2 percent below August and now is only slightly above a year ago. Retail banana prices in September advanced slightly from August, but are only moderately above a year ago. Increased imports combined

Table 2.--Quarterly Consumer Price Index for fresh fruit, 1983-86

Year	1st	2nd	3rd	4th	Annual Average
		(1967=100)			
1983	274	301	324	285	296
1984	295	321	355	343	329
1985	356	377	370	355 1/	365 1/
1986 1/	354	384	410	387	384

1/ Estimated.
SOURCE: Bureau of Labor Statistics.

with seasonally larger supplies of apples and oranges are likely to weaken banana prices. Consequently, retail fresh fruit prices are expected to fall through the early winter.

Retail prices of processed fruit have been moderately higher than a year ago, reflecting higher prices of frozen concentrate orange juice (FCOJ). However, the BLS September index of consumer prices for processed fruit declined slightly from August to 169.5 (December, 1977=100). It is 4 percent above a year ago. Since f.o.b. prices of some canned fruit and FCOJ have been reduced recently, retail prices of processed fruit are not expected to rise appreciably. But prices are still likely to remain moderately above a year ago.

Table 3.--Quarterly Consumer Price Index for processed fruit, 1983-86

Year	1st	2nd	3rd	4th	Annual Average
		(Dec. 1977=100)			
1983	151	150	151	151	151
1984	156	162	164	164	162
1985	167	169	170	171 1/	169 1/
1986 1/	172	173	174	175	174

1/ Estimated.
SOURCE: Bureau of Labor Statistics.

FRESH CITRUS

The November forecast of U.S. citrus production (excluding grapefruit in California's "other areas") for 1985/86 is 11.3 million tons, 8 percent above 1984/85, but still 31 percent below the record 1979/80 crop. The larger crop is primarily attributed to a 27-percent increase in Florida orange production.

Table 4.--U.S. citrus fruit production: 1979/80, 1984/85 and indicated 1985/86

Crop	1979/80	1984/85	1985/86
		1,000 tons	
Oranges	11,832	6,719	7,877
Grapefruit	2,986	2,246	2,106 1/
Lemons	789	980	825
Limes	44	68	68
Tangelos	288	162	144
Tangerines	275	139	146
Temples	270	146	158
Total	16,484	10,460	11,324 1/

1/ Excludes California grapefruit in "other areas."
SOURCE: Crop Production, SRS, USDA.

Oranges

The forecast of U.S. orange production for 1985/86 is 183.6 million boxes, 16 percent above last season's freeze-damaged crop. In Florida, the forecast for the production of all oranges is 132 million boxes, 27 percent above 1984/85. However, Florida orange production is not likely to recover to the historically high level of 207 million boxes for several years, reflecting the decreased bearing acreage as a result of recent freezes.

California's 1985/86 orange crop is forecast at 49 million boxes, off 6 percent from last season, but slightly above 1983/84. Arizona's outturn of all oranges is expected to total 2.1 million boxes, down 14 percent, but 17 percent above 1983/84. Texas's orange crop is expected to total 450,000 boxes, well below production levels prior to the December 1983 freeze. Last season, no commercial supplies were harvested in Texas and the utilized crop in 1983/84 was reduced by the Christmas 1983 freeze to 2.51 million boxes.

Opening f.o.b. prices for both California and Florida fresh oranges were moderately lower than a year ago. As the season progresses, prices are expected to fall further. However, the prospect of rising processor demand will probably keep Florida prices relatively high but at a lower levels than last season. In addition, reduced competition from smaller crops of apples and winter pears will help hold California navel orange prices relatively firm, but at lower levels than last year's unusually strong prices. Consequently, retail prices for fresh oranges will also hold relatively firm.

Foreign demand for U.S. fresh oranges is likely to improve further if the U.S. dollar continues to weaken. Additionally, the new trade agreement between the United States and Japan which calls for an increased import quota of U.S. oranges will raise shipments to Japan during 1985/86. Prospects for higher personal income, population increases, and improved living standards in the Far East will likely to continue to increase our shipments there. Through August this season, exports of fresh oranges to the East Asia and Pacific regions have increased 11 percent from a year ago. However, exports to the European Community (EC) have also increased from last year's low levels. In contrast, shipments to Canada, our major customer, fell substantially.

Grapefruit

The 1985/86 grapefruit crop, excluding California's "other areas," is forecast at 51.2 million boxes, down 1 percent from last season. Florida's total grapefruit forecast, 44 million boxes, remains unchanged from last season. Expected production in California's Desert areas, at 3.8 million boxes, will be only slightly below the previous season. Arizona's growers expect to harvest 2.9 million boxes, compared with 3.7 million last season. The Texas crop is forecast at 500,000 boxes, well below production levels prior to the December 1983 freeze. Last season no commercial supplies were available from Texas due to the same freeze and the harvested crop of 3.2 million boxes in the 1983/84 season was severely reduced by the Christmas 1983 freeze.

Shipments of fresh grapefruit are running well ahead of last season's pace. Demand for Florida grapefruit for the fresh market is expected to rise because of small supplies of Texas grapefruit. Export

markets may improve somewhat in view of the weakening U.S. dollar. Smaller stocks of most processed grapefruit products and strong movement will keep processor demand strong. Opening f.o.b. prices for Florida grapefruit were well above a year ago, while prices have declined to levels near a year ago with increased volumes. Rising demand is expected to hold prices relatively strong throughout the season.

Lemons

The Arizona-California lemon crop (tree crop available for harvest) totals 21.7 million boxes, 16 percent below the actual utilized production during the 1984/85 season. The California crop is forecast at 18.2 million boxes, 8 percent less than last year. The Arizona forecast, at 3.5 million boxes, is 42 percent less than 1984/85.

Because of the smaller crop, total movement through early November was well behind last season's pace. In response to reduced shipments, f.o.b. prices for fresh lemons have averaged significantly above a year ago. Although prices are expected to fall as the season progresses, this season's smaller crop should keep lemon prices well above last year.

PROCESSED CITRUS FRUIT

Because of the substantially smaller 1984/85 orange crop, the quantity of citrus fruit used for both fresh and processing fell slightly from 1983/84. However, the proportions used for fresh and processing remained unchanged at 33 and 67 percent from 1983/84, respectively.

The smaller Florida orange crop caused processing use to decline substantially, but the proportion of oranges processed at 93.6 percent, was up slightly from 1983/84. Despite a smaller quantity of oranges used for processing, the higher juice yield resulted in a pack of 118 million gallons of FCOJ, down only slightly from 1983/84. Processors recovered 1.38 gallons a box at 42.0 degree Brix, compared with 1.29 for the 1983/84 crop. Even with the larger carryin stocks, the smaller pack and reduced imports resulted in a 1984/85 total supply of FCOJ below 1983/84. Because of sluggish movement, f.o.b. prices for FCOJ (unadvertised brand, f.o.b., Florida canneries) have been reduced twice this year to the current level of $4.60 a dozen 6-ounce cans. This compares with $5.04 a year ago. Slow movement has also resulted in early November stocks 10 percent above a year earlier. However, it still appears that the carryover stocks could be near last year's 54.4 million gallons.

Barring a repeat of last season's freeze, the larger orange crop and higher juice yield should result in a sharply increased output of FCOJ in 1985/86. The first forecast for the 1985/86 juice yield is 1.42 gallons a box at 42.0 degree Brix. In addition, a larger quantity of Florida oranges will likely be used for processing because more California navel oranges will be available for the fresh market. FCOJ imports are expected to remain relatively large during the 1985/86 season. Thus, with the prospect of carryin stocks near last year, the total 1985/86 supply is expected to be moderately above 1984/85. If demand does not improve significantly, prices may weaken further.

According to the trade's estimates, Florida packers processed 240.7 million gallons of chilled orange juice (excluding single-strength reprocessed) in 1984/85, down 12 percent from 1983/84. Because of strong

prices and increased availability from States outside of Florida, total domestic movement from Florida was substantially below 1983/84. With the smaller output, ending stocks were slightly smaller than 1983/84. The larger crop and higher juice yield are likely to result in a larger pack of chilled orange juice in 1985/86. Since supplies of chilled orange juice are increasingly available in States outside of Florida, f.o.b. prices are likely to weaken somewhat.

FRESH NONCITRUS

The 1985 noncitrus crop--including major tree fruit and grapes--is forecast at 12.5 million tons, down 2 percent from last year. The decrease is primarily due to reduced summer fruit production. Production of apples and pears is smaller while the grape crop is up 5 percent. F.o.b. prices were generally substantially higher this summer than last. Smaller supplies are likely to hold prices of apple and pears relatively firm this winter.

Table 5.--U.S. noncitrus fruit, total production, 1983, 1984 and indicated 1985

Crop	1983	1984	1985
		1,000 tons	
Apples	4,187	4,143	4,057
Apricots	94	127	139
Cherries	258	317	273
Grapes	5,506	5,164	5,410
Nectarines	185	183	200
Peaches	928	1,322	1,005
Pears	775	710	675
Prunes and Plums	674	694	653
Total	12,607	12,660	12,462

SOURCE: Crop Production, SRS, USDA.

Apples

The final forecast of the 1985 U.S. apple crop places production at 8.11 billion pounds, down 2 percent from last year. The Eastern States expect a crop of 3.06 billion pounds, 6 percent below 1984. However, New York, the leading apple State in the East, expects a crop of 1.06 billion pounds, 4 percent above last year. The Central States crop is forecast at 1.64 billion pounds, up 35 percent from 1984. Most States show good gains, but the Michigan crop, the leading apple State in the region, is forecast at 1.1 billion pounds, an increase of 43 percent from last year. Production in the Western States is mixed, with an outturn of 3.41 billion pounds, 11 percent below the 1984 crop. Washington, the Nation's leading apple State, expects a crop of 2.4 billion pounds, down 19 percent. At 540 million pounds, apple production in California, the second largest producing State in the West, is 11 percent larger than 1984. Oregon's crop will be 27 percent larger than last season.

Shipments of fresh apples are running substantially behind last year's pace, primarily reflecting the slow movement of apples from Washington. F.o.b. prices for fresh apples at major shipping points showed a mixed pattern with strong prices in Washington. With a smaller crop in Washington and stable demand, prices for fresh apples are expected to stay firm through this winter. Processor demand for the current apple crop will not likely be as strong as last year. However, demand for juice apples is expected to rise somewhat because of strong demand for apple juice. Nevertheless, prices for processing apples have been negotiated generally lower than last season.

Grapes

The final forecast of the 1985 U.S. grape crop is 5.41 million tons, 5 percent above last year. Prospects in California point to a crop of 5 million tons, up 8 percent from last year, with larger crops expected for all types--table, wine, and raisin grapes. The California grape crop accounted for 92 percent of the U.S. total, compared with 90 percent in 1984.

Because of smaller crops in several major producing States, total grape production in States other than California is down 22 percent from 1984. New York expects a crop of 145,000 tons, 27 percent below a year ago. Washington, with a crop of 119,000 tons, is posting a drop of 29 percent from 1984. The forecast in Pennsylvania at 55,000 tons is 8 percent smaller. In contrast, Michigan's forecast of 50,000 tons is slightly above last year.

Because of a larger crop, shipments of fresh table grapes are running well above last season's pace. Supplies of table grapes for the fresh market are expected to be heavy this year because of the expected weak market for competing uses of multipurpose varieties. Consequently, f.o.b. prices have been weak. By early November, f.o.b. prices for Emperors were quoted at $7.00 a 23-pound lug in the central San Joaquin Valley, California, compared with $11.00 a year ago. On the other hand, despite heavy supplies, the field price for natural seedless raisins has been settled at $810 per ton, up $110 from a year ago. With the continued promotional efforts, raisin shipments may improve further. Nevertheless, the heavy supplies have depressed raisin prices. This year's producer price for raisins will be the lowest since 1977. The increased imports and the slow growth in wine shipments, combined with heavy supplies of raisins, have resulted in a mixed pattern of grower prices for wine grapes. Prices vary greatly among producing areas, supplies, and varieties of grapes. Sluggish domestic shipments have held wine prices steady. The BLS consumer price index for all wines during the first 9 months of this year averaged only slightly above a year ago. With stable demand and larger imports of foreign wine, wine prices are expected to remain steady.

Pears

The final forecast for the U.S. pear crop is 674,600 tons, 5 percent below the 1984 crop. Output of Bartlett pears in California, Oregon, and Washington is forecast at 429,000 tons, down 4 percent from last year. Production of Pacific Coast pears other than Bartletts is estimated at 210,500 tons, also off 4 percent from 1984, reflecting reduced crops from both Oregon and Washington, the principal suppliers of pears for the winter and spring fresh markets. Despite a smaller crop, fresh pear

shipments are slightly above last year. F.o.b. prices for fresh Bartletts were strong throughout the season. The smaller crop and rising processor demand are the primary contributors to higher f.o.b. prices. Opening f.o.b. prices for D'Anjou were substantially above a year ago. Prices are expected to remain strong in light of a smaller crop and less competition from smaller apple production.

A smaller Bartlett crop and reduced carryover stocks of canned pears have also strengthened prices of Bartletts for canning. The California Pear Growers Association and canners have reached a field price agreement of $206 a ton, compared with $175 last year. The field price has also been settled in the Northwest at a cash price of $215 a ton for No. 1 grade Bartletts, up from $187.50 last year. Thus, higher producer prices and smaller supplies are expected to result in higher prices of canned pears at all levels than a year ago.

PROCESSED NONCITRUS

Supplies of processed noncitrus fruit should be adequate to ample during the 1985/86 season. Even though the canned fruit pack is expected to be down for some items, larger carryin stocks will still result in large supplies for some canned fruit. However, prices are likely to remain relatively firm. Supplies of dried fruit, particularly raisins and prunes, will be adequate to ample. Raisin prices will remain weak. The total supply of frozen fruit and berries will be moderately larger than a year ago, due mainly to sharply larger stocks of cherries and blueberries. Supplies of most other frozen fruit and berries showed a mixed pattern. Consequently, these larger supplies and lower cost of raw products will likely keep prices weak for several items.

The 1984/85 pack of some canned noncitrus fruit will be moderately below last year. A trade source indicates that the unaudited pack of canned peaches totaled 17.7 million cases (No. 24-2 1/2's), down 5 percent from last year. A slightly reduced pack of mixed fruit--2.46 million cases (No. 24-2 1/2's)-- was also reported. In contrast, the canned fruit cocktail pack totals 10 million cases (No. 24-2 1/2's), up 15 percent from last year. Canned pear pack data are not available, but the smaller crop will probably reduce the pack this year.

With the smaller quantity of tart cherries used for canning, the 1985 canned cherry output should be less than last year. Nevertheless, with the larger beginning stocks, the 1985/86 supply of canned tart cherries is still heavy. In contrast, the output of canned sweet cherries will be well above last season. Thus, even with the smaller carryin stocks, the total supply should be adequate to meet demand. The Northwest Food Processors Association reported a pack of 426,064 cases of canned purple plums (No. 24-2 1/2's), up 28 percent from 1984. The increased pack combined with a sharply larger carryin stock will result in ample supplies of canned purple plums.

Processor demand for juice apples is likely to remain strong because of increased apple juice consumption, but demand for apples used for other canned items is not likely to be as strong as the previous year. Total supplies of canned apple items should be adequate to meet demand.

Although prices of canned fruit this year have fluctuated in a narrow range, the BLS October produce price index for canned fruit, at 276.9 (1967=100), was almost 2 percent higher than a year ago. Even though packers announced price reductions for some canned fruit, prices are expected to remain above last year in view of relatively small supplies and higher contract prices for some fruit.

With the larger California grape crop, raisin output this season will remain relatively large. At present, the trade is forecasting a total raisin production of 390,000 tons from which 40,000 tons will be set-aside for reserve under the raisin diversion program. The larger output combined with the increased carryin stocks will result in heavy supplies again in 1985/86. Consequently, even with the field price hike for this year's natural seedless raisins in anticipation of improved demand, wholesale prices will remain relatively weak. This year's wholesale price of raisins is expected to be the lowest since 1977.

Production of dried prunes, the other major dried fruit, is currently estimated at 130,950 tons (natural conditions), down almost 10 percent from 1984. However, with the carryin stocks well above last year, the season's supplies will be only slightly below the previous season, according to the Prune Administrative Committee. Early season shipments of dried prunes through September were down 4 percent from last year because reduced exports more than offset larger deliveries to domestic markets. Exports recorded a 20-percent decrease, due primarily to reduced shipments to Finland, West Germany, and Italy. However, export demand is likely to improve somewhat because France, a major producing country, expects a sharply smaller crop this year. The October BLS producer price index for dried prunes stood at 251.3 (1967=100), slightly above a year ago. Prices will likely be steady during 1985/86.

The 1985 pack of frozen fruit and berries will vary this year. Freezers in California, the leading State, have received 14-percent more strawberries through the end of October than a year earlier. However, U.S. imports of frozen strawberries have been well below a year ago. Deliveries of strawberries to freezers in the Northwest this season showed decreases from last year. Nevertheless, total inventories of frozen strawberries as of October 1 are the highest in the past decade. Much of the product, however, has already been contracted.

Freezer's receipts of blackberries were up sharply in Oregon, but down in Washington. Deliveries of blueberries to freezers in Oregon and Washington also increased. Likewise, deliveries of blueberries to freezers in Michigan, the leading State, showed a significant increase and blueberry stocks are at a record level. Reflecting another larger crop, the total quantity of tart cherries used for freezing increased moderately from last year. Consequently, total supplies of frozen tart cherries remain heavy. Preliminary October 1 holdings of red raspberries at 30 million pounds were the second highest for that date in the past decade. With the heavy supplies, prices of these major fruit and berries are expected to be significantly below a year ago.

TREE NUTS

Supplies of tree nuts will be adequate to ample during 1985/86. The almond crop will be sharply below last year's record crop, while walnut production is projected slightly larger. Production of filberts and

pecans will also be well above last year. Opening prices for almonds were moderately below a year ago. Prices of filberts and pecans are likely to be above last year, while walnut prices are expected to be firm.

The final forecast for California's 1985 almond crop is 495 million pounds (shelled basis), 16 percent below last year's record crop. However, the total supply of almonds will remain heavy because of sharply larger carryin stocks. Demand is a key factor for almond prices this season. In addition, establishment of a 20-percent reserve by the Secretary of Agriculture under authority of the marketing order may moderate the price decline. Domestic shipments of almonds, so for this season (July 1-September 30), increased 25 percent from a year earlier. Exports also showed sharp gains due primarily to larger purchases from West Germany, France, Eastern Europe, and Japan. Consequently, the export share of shipments increased to 70 percent from 66 percent a year earlier. Export prospects are promising in view of lower prices and the weakened U.S. dollar. However, a near record crop in Spain combined with the EC's 7-percent ad valorum tariff on Spanish almonds are likely to hurt U.S. exports to Europe somewhat. With lower prices and an improved economy, the outlook for the domestic market will remain strong.

The 1985 forecast of filbert production in Oregon and Washington is a record high 24,000 tons, 79 percent more than last year's crop and nearly three times the small crop harvested in 1983. Even with the smaller carryin stocks, total supplies during 1985/86 should be heavy. However, Turkey, the leading producer, expects a crop of 280,000 metric tons (in-shell basis), down 7 percent from 1984. The smaller crop combined with sharply reduced beginning stocks will result in total supplies 15 percent below last year. Italy, the second largest producer, expects to harvest 130,000 metric tons, up 136 percent from 1984. However, total supplies are expected to be up 77 percent because of the prospect of sharply reduced imports. Overall, the 1985/86 world almond supplies are projected to be 11 percent above the previous season. Since Turkish filbert prices have advanced, U.S. grower prices for the 1985 filbert crop will probably also rise because a large quantity of U.S. filbert consumption is from Turkey.

The October 1 forecast for the U.S. pecan crop was 263 million pounds, 13 percent above 1984. The increased production is mainly attributed to larger crops in Alabama, New Mexico, and Texas, while Georgia, the leading State, expects to harvest a crop of 105 million pounds, off 12 percent. Carryin stocks are well below last year's; thus, the total supply of pecans remain moderately below last season. Smaller pecan supplies, coupled with reduced walnut supplies, are likely to keep pecan prices relatively firm.

The 1985 California walnut crop forecast is 215,000 tons, (in-shell basis), 1 percent more than last year's production. However, even with a larger crop, total supplies will be down slightly because of moderately reduced carryin stocks. Shipments of in-shell walnuts during the first 2 months of 1985/86 were up 31 percent from a year ago, while those of shelled walnuts were down 3 percent. Exports were up for both in-shell and shelled walnuts. However, exports are not expected to increase significantly because of the prospect of a sharply larger French walnut crop. Domestic demand is likely to remain relatively strong in view of the improved economy. Thus, the smaller supply may help maintain walnut prices.

PER CAPITA FRUIT CONSUMPTION

Per capita fruit consumption in 1984 is estimated at 198.5 pounds (fresh weight equivalent), down 22.6 pounds or 10 percent from 1983. The decrease is entirely attributed to reduced citrus consumption, while noncitrus consumption remained unchanged even with the exclusion of canned apple, cranberry, and pineapple items.

Per capita fresh fruit consumption fell to 89.5 pounds in 1984 from 91.1 in 1983 as decreased citrus consumption more than offset increased noncitrus consumption. Per capita fresh citrus consumption dropped 17 percent with decreases for all citrus. Oranges, the leading citrus fruit, contributed to most of the decrease. However, oranges still accounted for 54 percent of total fresh citrus consumption--the same as 1983. Lower orange consumption was caused by sharply reduced California navel orange supplies and higher prices.

Per capita fresh noncitrus fruit consumption, estimated at 65.8 pounds, was up moderately from 1983. Most of the increases were shared by bananas, peaches, plums, and strawberries. In response to lower prices, consumption of bananas, the leading fresh fruit, increased to 22.1 pounds in 1984 from 21.2 in 1983. With sharply larger supplies and lower prices, peach consumption gained 1.3 pounds to 5.4 in 1984. In contrast, apple consumption fell from 18.4 pounds in 1983 to 18.1 in 1984 because of higher prices. Grape consumption remained unchanged at 5.4 pounds.

Per capita consumption of processed fruit (fresh weight equivalent) fell from 130 pounds in 1980 to 109 in 1984 with most of the decrease indicated for citrus. Processed citrus consumption dropped to 81.2 pounds in 1984 from 98.8 in 1983 with every item declining. Reflecting higher prices, FCOJ, the leading item, declined to 66 pounds in 1984 from 76.9 in 1983.

The 1984 per capita processed noncitrus consumption is not comparable with 1983's because canned apples, cranberries, and pineapples are not included in the 1984 processed noncitrus consumption. Consequently, per capita noncitrus consumption fell to 27.8 pounds in 1984 from 31.3 in 1983. Excluding these items for both years, per capita canned fruit consumption decreased to 8.9 pound in 1984 from 9.7 in 1983. However, consumption of both frozen and dried fruit was up slightly, while that of canned juice declined slightly.

Per capita fruit consumption in 1985 is projected at 191.9 pounds (fresh weight equivalent), 6.6 pounds or 3.3 percent below 1984. The decrease will likely be attributed to sharply reduced fresh citrus consumption resulting from higher prices. Higher prices will also contribute to a slight decrease for processed citrus items. Per capita noncitrus consumption is also expected to fall slightly due primarily to decreases in fresh peaches, plums, apples, and pears.

Table 6.--Per capita fruit consumption, 1981-85

Year	Total	Fresh	Canned 1/	Chilled 1/	Frozen 1/	Dried
	Pounds, fresh weight equivalent					
1981	221.7	86.6	51.3	8.8	64.8	10.3
1982	216.7	86.8	37.9 4/	7.5	73.3	11.2
1983	221.1	91.1	29.5 5/	8.6	80.1	11.8
1984 2/	198.5	89.5	20.0 6/	7.5	69.3	12.2
1985 3/	191.9	86.0	19.3 6/	7.2	67.0	12.4

1/ Canned, chilled, and frozen includes fruit and juice. 2/ Preliminary. 3/ Estimated. 4/ Excludes pineapple products. 5/ Excludes apple juice and pineapple products. Excludes apple and pineapple products.
SOURCE: Economic Research Service, USDA.

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Supply Commercial Vegetables

1985/86 Looks at Lower Supplies

The 1985 production of commercial vegetables--fresh and processing--is expected to be 2 to 4 percent below 1984. Production will likely be between 424 and 434 million cwt, 9 to 19 million cwt lower than 1984.

The decline results from a 3- to 5-percent reduction in dual-purpose and fresh-market vegetables (broccoli, carrots, cauliflower, celery, sweet corn, lettuce, onions, tomatoes, and honeydews) and a 2-percent reduction in the four major processing vegetables (green peas, snap beans, sweet corn, and tomatoes).

Table 1.--Commercial vegetables: U.S. production of major items in principal producing States, 1975-85 1/

Year	U.S. production
	Million cwt
1975	407.4
1976	370.0
1977	402.9
1978	382.2
1979	414.4
1980	381.4
1981	379.1
1982	430.8
1983	409.3
1984	442.7
1985 2/	424-434

1/ Includes fresh and processing snapbeans, broccoli, carrots, cauliflower, celery, sweet corn, honeydew melons, lettuce, onions, green peas, and tomatoes. 2/ Unofficial ERS estimate.
SOURCE: Statistical Reporting Service, USDA.

The reduction in dual-purpose and fresh-market vegetables is attributable to a 4-percent cutback in winter acreage and a 7-percent cutback in fall acreage. Spring and summer acreage rose only 2 percent.

The 2-percent reduction in processing vegetables is largely attributable to an 8-percent reduction in annual tomato acreage. The other three processing vegetables--sweet corn, green peas, and snap beans--are up an average 7 percent. Snap bean output led the way with a 9-percent increase over 1984.

Increased production of sweet corn, green peas, and snap beans will translate into larger packs and boost 1985/86 supplies. Lower domestic processing tomato output will show up as a lower pack and likely reduce 1985/86 supply. Imports of processed tomatoes will partially offset reductions in domestic supply.

Demand
Commercial Vegetables

Consumption levels, receipts fall

Consumption in 1985 likely will be between 181 and 187 pounds per person. Lower production in 1985 will not keep pace with population growth. Imports, however, will likely add to supply.

Table 2.--Commercial vegetables: U.S. per capita consumption of major items, 1975-85

Year	Per capita consumption
	Pounds (fresh equivalent weight)
1975	172
1976	170
1977	172
1978	168
1979	173
1980	172
1981	172
1982	184
1983	180
1984	185
1985 1/	181-187

1/ Unofficial ERS estimate.
SOURCE: Economic Research Service, USDA.

Commercial vegetable producers are likely to face reduced revenues in 1985 because of reduced output and lower average prices. A 2- to 4-percent reduction in 1985 output coupled with a 7-10 percent lower average price, reduced cash receipts about 10 percent below 1984 levels. The average index of prices received by growers for commercial vegetables during the first three quarters of 1985 dropped 11 percent compared to this period last year.

With a reduced output this year, the important issues for vegetable producers become: (1) the future growth in demand for vegetables, and (2) the continuing response of imports to the strong relative dollar in competing nations.

Potatoes, Sweetpotatoes, and Pulses

Across the Board Increases

The total commercial production of potatoes, sweetpotatoes, and pulses is estimated at 437 million cwt, 11 percent higher than a year earlier. Across the board increases contributed to the overall 11-percent rise, though potatoes played the primary role, increasing 12 percent to a record 400 million cwt. Sweetpotato production at 13.9 million cwt, is up 7 percent compared to 1984, the highest level in 15 years. Dry edible bean output is 22.1 million cwt, up 6 percent over last year though 21-percent below the 1980-81 export-driven average of 28 million cwt.

The increased supply prospects for potatoes, sweet potatoes, and pulses indicate higher consumption. Given an estimated output of 437 million cwt, consumption will likely be around 135 pounds per person, 4 percent above a

Table 3.--Commercial potatoes, sweetpotatoes, and dry edible beans: U.S. production, 1975-85

Year	U.S. production
	Million cwt
1975	352.3
1976	388.8
1977	383.8
1978	398.4
1979	376.4
1980	341.6
1981	383.8
1982	395.5
1983	361.5
1984	392.1
1985 1/	436.5

1/ Preliminary.
SOURCE: Statistical Reporting Service, USDA.

year earlier. Imports and exports play a larger role in consumption of both potatoes and dry edible beans than of sweetpotatoes.

Because the 1985 potato crop rose 12 percent from last year, consumption will also rise this year and next. Ample stocks of processed potatoes in 1985 have reduced the demand for fall potatoes, and higher processors' stocks shadow hopes for renewed demand in the 1985/86 season. Potato prices are likely to average 25-30 percent below last season's average price of $5.69 per cwt, which could further stimulate movement. Increases in demand to reduce burgeoning stocks could be offset by increased import pressure.

A record 1985 potato crop of 400.4 million cwt is likely to lower cash receipts 10-16 percent from last season's $1.9 billion. A larger production coupled with lower receipts will lead producers to reduce acreage in 1986. With a record supply this year, the important issues for potato growers become: (1) the increasing pressure on domestic markets from Canadian imports and (2) the development of new markets.

U.S. Vegetable Trade

Import Pressure Mounts

Imports respond to growing demand and the strong dollar. Fresh vegetable imports have grown 7 percent annually since 1980 and exhibit occasional flutuations following adverse climate in U.S. production areas.

However, fresh imports still provide only an estimated 10 percent of the total domestic value. The import value, or the f.o.b. value in U.S. dollars, is up 3 percent over 1984, due primarily to increased quantities and not higher prices.

Imports do surpass exports in value by about 25 percent. Our major imports are from Mexico, Canada, and others which are primarily the Caribbean Islands. On a regional and seasonal basis, imports compete primarily with Florida's fresh-market production. On the national level, imports peak at the lowest point of domestic production. The United States imported approximately 2 billion pounds of selected fresh vegetables from Mexico and 231 million pounds from Canada in 1984. The United States imported 824 million pounds of fresh-market tomatoes mainly from Mexico in 1984, nearly double the level from the previous year. Other large U.S. imports are carrots, 213 million pounds and onions, 248 million pounds in 1984, which come mainly from Canada.

The United States fresh-market vegetable exports have grown at an average annual rate of 2 percent since 1980. Our major fresh vegetable exports are celery, lettuce, onions, and tomatoes. On a seasonal basis, exports peak during late spring at an average 145 million pounds and then fall off to a low of 48 million pounds in late summer.

U.S. exports increase seasonally in the winter, with the majority going to Canada. However, these exports do not compete on a seasonal basis with Canada's fresh-market season. Other primary export countries are Mexico, Japan, and Hong Kong.

Looking more closely at imports from Canada and Mexico, their seasonal patterns are complementary to each other and the United States. The bulk of vegetables from Mexico arrive mainly during January through May and compete with Texas and Florida growers. U.S. imports from Canada arrive in the late fall and early winter period, and compete with vegetables grown in the northeastern States. Mexican imports generally peak in April while imports from Canada are at their lowest point. April marks the beginning of the spring vegetable deal. In turn, U.S. production peaks during June and July.

Potato imports from Canada overlap with the marketing of U.S. potatoes in the Northeast. The United States imported 4.8 million cwt of fresh potatoes--primarily from Canada--worth $31 million, in the 1984/85 marketing season that ended June 30. The increase was 49 percent over 1983/84, and breaks the record set in 1981/82. Potato acreage has been steadily increasing in the Maritime provinces since 1981--allowing for its growth in exports. Estimates for 1985 indicate that this trend will hold. While the Northeastern round white potato growers--primarily Maine--cut acreage in 1983, they increased acreage this season to 97,000, though they allocated more toward russets--about 6 percent of their total acreage.

Canada imports U.S. potatoes, mostly from western States but also from mid-Atlantic and southern States during the summer. In 1984/85, the United States exported 156,000 tons of potatoes to Canada, an 8-percent increase over the previous year.

The U.S. vegetable industry witnessed the inundation of imports since the early 1980's. The rise in imports can be partially attributed to stronger demand and relatively strong prices. Whether or not the upward trend will prevail depends on these factors and others. The growth in imports could fall off for the next year. Rising imports through September 1985 -- about 19 percent above 1984 -- boosted reduced domestic supplies enough to effectively lower grower prices 11 percent through the end of third quarter. The reduced grower returns for the 1984/85 season may deter foreign imports as Mexico has cut winter fresh-market acreage of tomatoes for the 1985/86 season.

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Despite significant changes in the Government's tobacco price support and production control program in 1982 and 1983 the outlook for tobacco is uncertain. Bills are pending in Congress that would further change the tobacco program and flue-cured and burley growers will vote early next year whether or not to continue the program another three years. The U.S. tobacco outlook for 1985/86 is highlighted by large supplies of leaf and reduced demand for tobacco products. Because the 1985 crop was of good quality and prices are lower, exports may rise. Domestic use may also increase a little, so total use may be up in 1985/86. U.S. production in 1985 is down about 12 percent from last year. The smaller production more than offsets higher carryin stocks and reduces supplies about 2 percent to 5.3 billion pounds.

The size of the 1986 crop will depend in part on USDA's decision on quotas, which under current law, have to be made by December 15 for flue-cured and February 1 for burley and other kinds. Basic quota for flue-cured may go lower and burley quota may remain the same. However, effective quotas are likely to drop below 1985 levels for both kinds because quota carryover is lower. The drops in effective quotas point to a smaller crop next year if yields are average. As in 1985, prices are likely to be lower than in the recent past, so the drop in production would reduce the total value of the crop. During the next few weeks, Congress is likely to complete legislative changes in the burley and flue-cured tobacco programs. Principal changes would occur in the quota-setting procedure, price support levels, and no net cost assessments.

Cigarette Sales Declining

Cigarettes are the dominant product of the tobacco industry in the United States and most other countries. U.S. cigarette output may drop to 662 billion pieces this year, about 6 billion below 1984 and 75 billion below the record high in 1981. Cigarette consumption may fall about 1 percent after remaining stable in 1984. Consumption per person in the United States, 18 years and older, may drop by 77 cigarettes (about 4 packs of 20) from 3,461 to 3,384. This would be the lowest since 1944. During the 1970's, cigarette smokers shifted toward low-tar brands, however, there has been a reversal since 1981. Since 1981 the proportion has fallen but it may have steadied at a little over one-half the average during the last three years.

Despite an increase in the smoking age population, total consumption of cigarettes may decline a little again in 1986 and per capita consumption is also expected to decline. Tax increases that have raised cigarette prices significantly the last three years are a primary reason for the expected decline in both total and per capita consumption. The Federal excise tax was increased from 8 to 16 cents a pack on January 1, 1983, the first increase since 1951. The tax was scheduled to return to

8 cents on October 1 this year, but the 16 cent rate has been extended through December 14, and is expected to become permanent. A total of 18 States raised excise taxes in 1983 and 1984 by about 4 cents a pack. Another 12 States raised excise taxes by an average of 6 cents in 1985. State tax levies now vary from 2 cents a pack in North Carolina to 28 cents in Maine. The combined city and State tax is 29 cents a pack in New York City and 43 cents in Chicago, Illinois. Further State tax increases will occur in 1986.

Wholesale cigarette prices rose in December, 1984 and again in June this year. The June increase marked the ninth hike since August, 1982, and was the result of the doubling of the Federal excise tax and increases in manufacturers' costs. Retail cigarette prices jumped 42 percent from August, 1982 to October, 1985. However, the rate of increase in retail prices has slowed the last two years; they rose 6 percent from October, 1984 to October, 1985. Retail price hikes are likely to continue in 1986 at a 6 to 8 percent annual rate. This rate of increase could cushion the drop in per capita use, resulting in only a small drop in total cigarette consumption.

Antismoking activity, including legislation, continues to affect the industry. More than four-fifths of the States now have laws that either prohibit smoking in certain places or segregate smokers and nonsmokers. Ten States regulate smoking in the workplace. Also, a large number of towns and cities have some smoking restrictions. The U.S. Department of Health and Human Services and voluntary health agencies are continuing efforts to discourage smoking. Furthermore, a number of product- liability suits against cigarettes manufacturers are pending. The cumulative effect of publicity and ordinances on smoking is uncertain, although it almost surely accounts for some of the downward trend in per capita consumption.

Under provisions of the Comprehensive Smoking Act signed into law October 12, 1984, the Federal Cigarette Labeling and Advertising Act was amended. Under the change, effective in mid-October 1985, four separate messages about the hazards of smoking are being rotated at about 3-month intervals. These warnings are:

- Surgeon General's Warning: Smoking Causes Lung Cancer, Heart Disease, Emphysema and May Complicate Pregnancy.

- Surgeon General's Warning: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.

- Surgeon General's Warning: Smoking by Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight.

- Surgeon General's Warning: Cigarette Smoke Contains Carbon Monoxide.

Warnings on cigarette packages are about 50 percent bigger than the ones they replaced, and are surrounded by thick lines. Similar warnings are posted on billboards and published in ads for cigarettes.

Each brand of cigarette is assigned a rotation of the four warnings which is changed quarterly depending on the date the cigarettes are manufactured or packaged. The rotations differ from brand to brand.

In addition, a warning rotation system has been set up for various advertising media, also to be changed quarterly according to the brand being advertised. All four warnings now appear before the public at all times.

The new warnings replaced the one that stated: "Warning: The Surgeon General Has Determined That Smoking is Hazardous to Your Health".

Changes In Tobacco Per Cigarette Affect Total Use

Tobacco use in cigarettes remained relatively constant during the 1970's and in 1980 and 1981, despite the gain in cigarette output. For many years, manufacturers could economize in leaf use as they shifted to filtertip brands and used the whole leaf. Later, manufacturers began utilizing various leaf expansion processes and in recent years have used more imported tobacco to stabilize costs.

U.S. cigarette manufacturers used an estimated 1,141 million pounds of tobacco (unstemmed processing weight) in cigarettes in 1984. This was a little below 1983 because leaf use per cigarette declined. In 1984, domestic use declined but imports rose. This calendar year, with cigarette output decreasing, perhaps 1 percent, manufacturers are likely reducing their total tobacco use.

Manufacturers used an estimated 1.71 pounds of tobacco (unstemmed processing weight) per 1,000 cigarettes produced in 1984, about 4 percent below a year earlier and considerably below the levels of 10 to 15 years ago. Domestic flue-cured accounts for about 34 percent, burley 29 percent, and Maryland 3 percent. Foreign grown reached a new high of 34 percent. Fifteen years earlier it was 14 percent.

Consumption of Other Tobacco Products

Total consumption of large cigars (including cigarillos) will likely fall from last year's 3.5 billion. Consumption has declined the last 14 years and may decline sharply again in 1985. Current consumption is only a little more than one-third of the 1964 peak. Small cigar consumption may rise a little. Use of smoking tobacco in 1985 is down to 27-1/2 million pounds, a record low. Consumption of smoking tobacco and cigars will likely fall again next year.

Snuff consumption is up again this year. Moist snuff production is up while dry output is down. Chewing tobacco production is down a little. Production is down for all categories of chewing tobacco: plug, twist, and loose leaf. In 1986, snuff consumption may rise again while chewing consumption may fall further.

Future consumption of snuff depends importantly on whether legislation is enacted to impose Federal excise taxes on smokeless tobacco products and/or place warning labels on them. Several bills have been introduced that would impose Federal excise taxes on smokeless tobacco products and a House Energy and Commerce subcommittee approved legislation to place warning labels on smokeless tobacco products and ban advertising on those products on television and radio beginning in January. The labels would warn consumers that the product may cause mouth cancer, gum disease, and tooth loss and that it contains nicotine and is addictive.

World Situation

The world tobacco economy can be expected to improve somewhat in 1986. Total production is forecast to increase around 2 to 2-1/2 percent. Cigarette output is expected to increase about 2 to 3 percent, as the world economy continues to improve. Leaf supplies will remain sufficient to keep up with demand. Grower's prices may remain stable or decline slightly in local currency. Total export values will likely increase as total amounts exported will increase.

World tobacco production in 1985 was up 4-1/2 percent from 1984, to 6.8 million metric tons, just slightly under the record set in 1982 of 6.9 million metric tons. Among the main cigarette types, flue-cured production was up, to 3.5 million metric tons, solely a result of increased Chinese production. There, production went from 1.54 to 1.95 million metric tons. For virtually every other major producer, production was off. Production declined in the United States, Brazil, Argentina, Zimbabwe, India, the Philippines and Thailand. With total production of over 2 million tons, China is by far the world's largest tobacco producer, followed by the U.S., Brazil, and the U.S.S.R.

In 1985, the world burley crop was down, as production declines in the United States were not offset by increases in Greece and come other countries.

World production in 1985 of oriental tobacco declined slightly from the 1984 level, as declines in Greece, the Soviet Union, Romania, and Yugoslavia exceeded increases in Italy and Bulgaria.

Production of other kinds, principally dark air-cured, continued to decline in line with decreasing world consumption of cigars and dark cigarettes.

World cigarette output -- the key determinant of leaf demand -- will likely grow further in 1986 as income throughout the world, and particularly in the People's Republic of China, continues to increase. Consumption in the industrialized countries will remain stagnant as health concerns, smoking restrictions and higher taxes continue to depress demand. Consumption in the newly industrializing countries is still increasing.

Output in 1986 is expected to reach 4,965 billion pieces, about 2-1/2 percent above this year's estimated 4,840 billion pieces.

Among the major consuming countries, only cigarette output in the Soviet Union and the People's Republic of China will likely continue to expand. Consumption is increasing dramatically in the People's Republic of China, up approximately 9 percent each year and consumption in 1986 will reach around 1,250 billion pieces. Outside the PRC, consumption will only increase about 1 percent. Consumption in Japan, France, the United States, the Federal Republic of Germany, and the United Kingdom will remain stagnant. Other countries expected to show an increase include Spain, Egypt, Bulgaria, and Italy.

Although cigarette output is increasing, manufacturing efficiencies are improving world-wide, requiring less toabcco per cigarette. Thus, leaf demand will not increase to the same degree that cigarette output will.

World leaf trade -- reflecting moderate growth in demand -- has been increasing since 1983. Exports are expected to increase from this year's 1.46 million metric tons to around 1.5 million metric tons. The shift in the pattern of exports in favor of developing country suppliers is likely to continue, but not at the same rate as in the recent past.

During the past decade, Brazil, Zimbabwe, Malawi, Greece, and Italy have become substantially larger exporters of raw tobacco. North American countries have experienced declining exports and rising imports, principally due to the shift in U.S. trade. Any reversal of this trend will depend upon world price relationships.

Europe will continue to remain a tobacco deficit region, accounting for about three fifths of world imports and only one fifth of exports. Many Western European countries, including the United Kingdom, Sweden and Norway, and totally dependent on imports for their tobacco needs.

Leading Eruopean exporters include Greece, Italy, Bulgaria and Yugoslavia. A large portion of the exports from these countries is oriental and semi-oriental tobacco.

In Africa, the growth in imports by Egypt, Algeria and Tunisia has outpaced Malawi'a and Zimbabwe's larger exports.

U.S. Tobacco Crop Smaller

Tobacco production is down this year because of smaller effective quotas and acreage allotments. Because of weaker demand and lower quality tobacco, flue-cured prices were 9-cents-a-pound lower than last year. Flue-cured cash receipts from the 1985 crop were down about 10 percent. Furthermore, net farm returns have been further squeezed by the 17 cent-a-pound hike in the no-net-cost assessment.

As of November 1, the tobacco crop was forecast at 1.53 billion pounds, down 12 percent from a year earlier and the smallest since 1943. Total supplies for the 1985/86 marketing year are down about 2 percent as the smaller crop more than offsets a larger carryin.

Price support levels for all types of tobacco except flue-cured, burley and dark air-cured are the same in 1985 as in 1984. The effective flue-cured support level was reduced 5 cents a pound and the dark air-cured level was lowered 1 cent. Burley supports were lowered 30 cents a pound from the previously announced level to $1.488 a pound with legislation signed November 15. This legislation also reduced the no-net-cost assessment from the previously announced 30 cents to no more than 4 cents a pound. Burley auctions opened on November 25 and prices are down considerably from last season $1.87 per pound average despite the higher quality crop. Cash receipts from the 1985 burley crop will fall sharply.

At the beginning of the 1985/86 marketing year, unsold tobacco held under Government loan totaled about 1.4 billion pounds (farm-sales weight), up about 250 million pounds or a fifth higher than a year earlier. The hike resulted from loan receipts last marketing year of 159 million pounds of flue-cured and 200 million pounds of burley. Together with 525 million pounds of burley and 455 million pounds of flue-cured taken under loan in the two previous seasons, unsold loan stocks have shot up more than 300 percent the last three years. The combined loan takings of the past three seasons represent a sizable oversupply. Prices of much of the flue-cured and burley loan takings exceed the costs of comparable tobacco from other countries.

In an attempt to boost trade purchases of flue-cured and hold down loan takings, the effective flue-cured price support was lowered 5 cents a pound. USDA also authorized the Stabilization Corporation to offer buyers of this year's crop a 10-cents-per-pound rebate from the no-net-cost tobacco fund as the tobacco was sold. Another 15-cent per pound rebate on all purchases was authorized for the end of the marketing season if buyers purchased at least 650 million pounds of the 1985 flue-cured crop and at least 125 million of 1976-84 flue-cured loan stocks. Since the trade purchased about 660 million pounds of flue-cured tobacco, the first criterion has been met. The requirements of the loan stock purchases are as follows:

- Effective November 18 through December 23, 1985, Stabilization will offer all of its old-crop inventories at discounts from the October 29, 1984, base prices. The discounts will be 90 percent for the 1976-81 crops and 10 percent for the 1982-84 crops.

- Total purchases under the incentive discount program must be prorated over all grades, types, and crop years in the inventory.

The 1985 flue-cured auction season ended on November 7 with prices averaging $1.72 a pound, about 9 cents a pound lower than last year. About 132 million pounds of tobacco was placed under loan, 27 million fewer than a year earlier.

Government price support is mandatory for tobacco produced under marketing quotas. Support levels for 1986 are uncertain because of pending legislation and potential administrative actions. However, under current law, the change in support levels for 1986 will again be based on the formula that has been used most years since the early 1960's. However, the Secretary of Agriculture retains authority to approve as little as 65 percent of any increase called for by the formula in any given year. Because of large supplies of flue-cured and burley tobacco, the 1986 support will likely increase the minimum of about 1 percent from the established 1985 level. The effective 1985 flue-cured price support was lowered administratively and the 1985 burley support has legislatively been reduced.

Marketings from the 1985 flue-cured crop were about 7 percent below last year's marketings. Together with the smaller carryover flue-cured supplies for 1985/86 are about 5 percent below last season. The flue-cured effective quota was reduced by 9 percent this year. Because of excess production in 1984, 12-1/2 million pounds of 1984-crop tobacco was sold in 1985. Some growers have tobacco in excess of their allowable 110 percent this year. Leasing is not authorized during the marketing season, so such tobacco will have to be carried over on farms, because Stabilization or other firms have no provisions for receiving or processing this tobacco.

Under the acreage-poundage program, USDA is required to announce the national marketing quota for the 1986 crop of flue-cured by December 15, 1985. The 1985 basic quota was 774 million pounds, or about 150 million pounds below prospective use. Still, current supplies equal use for about 3.1 years, compared with the desired supply of 2.3 years, as provided for under the legislative formula. Because this season's marketings exceed 1985's effective quota the effective quota for 1986 will be lower than the basic quota.

The 1985/86 supply of burley tobacco is about 1 percent above last season. Carryover stocks on October 1 were 9 percent above a year ago because of the large 1984 crop. This year's crop is 15 percent below last year's crop. Acreage was down 16 percent and yields were up about 1 percent. USDA regulations allow the crop to be sold in bales, sheets, or hand-tied. Most of the crop will likely be sold in bales or sheets.

During the year ending September 30, 1985, burley disappearance totaled 556 million pounds, 11 percent above the previous year but 12 percent below 1979's record. Domestic use rose 4 percent and exports jumped 37 percent to a record 154 million pounds. The much improved quality of the 1984 crop together with the building of U.S. stocks in some countries caused the big jump in exports. Domestic use increased because cigarette output rose a little and more tobacco was used per cigarette. Total use may rise in 1985/86 because exports could increase and domestic use may rise a little even though cigarette production falls.

Legislation relating to burley tobacco requires that the national quota be at least 90 percent of the estimated disappearance for the year and at least 90 percent of the previous year's quota. With disappearance expected to be around 570 to 585 million pounds in 1985/86, the 1986 basic quota may not change from this year's 524 million pounds even though supplies are equivalent to about 3.6 year's use compared with a desired level of 2.5 year's.

Among other types of tobacco, supplies of fire-cured and dark air-cured are up. Supplies of Maryland and cigar tobaccos are down. Ample supplies of all types are available.

Producer referendums will be held in early 1986 to determine if growers of flue-cured, burley, Maryland, Virginia sun-cured (type 37), Pennsylvania filler (type 41) and cigar binder (types 51-52) desire acreage allotments for their next three crops. Maryland, Pennsylvania filler (type 41) and cigar binder (types 51-52) voted against quotas in previous referenda.

Legislation

Despite the fact that three significant pieces of legislation were signed into law in 1983 and 1984, major concerns persist about the tobacco program. There is a sense of urgency within much of the tobacco industry to further modify the price-support formula and move loan stock tobacco into trade channels.

The legislation authorizing the Tobacco Price Support and Marketing Quota program is permanent and thus not a part of the Agriculture and Food Act of 1981 which expires after the 1985 crop year. Therefore, tobacco provisions were not included in the administration's proposed 1985 farm legislation.

Both the House and Senate have adopted tobacco program changes as part of budget reduction measures. The House would continue the Federal excise tax on cigarettes at 16 cents a pack and earmark 1 cent of the tax for offsetting losses in operating the price support program. The Senate measure also continues the Federal cigarette excise tax at 16 cents a pack and includes comprehensive changes in the Tobacco Price Support and Production Control program. The proposed modifications are based on recommendations by grower groups, manufacturers and Stabilization cooperatives.

The major provisions are as follows:

Price Support

- The price support for 1985-crop burley tobacco would be lowered to 1.449 per pound. However, the price support for 1985-crop burley has been legislatively reduced to $1.488 per pound so this provision has essentially been met with separate legislation. The price support level for flue-cured was lowered administratively.

- The price support for the 1985 crop of any kind of tobacco (other than flue-cured and burley) would be set using the same formula as in current law for the 1986 crops of such tobacco. Also, for other types, authority is given the loan associations to reduce support levels if market conditions warrant.

- For 1986 and future years, the flue-cured and burley price support would be the level for the preceding year adjusted by changes in the 5-year moving average of market prices (two-thirds weight) and the change in a cost of production index (one-third weight). The Secretary of Agriculture could set the price support between 65 and 100 percent of the calculated amount. However, current provisions of law giving the Secretary of Agriculture authority to lower the price support on certain low quality grades of flue-cured tobacco would be repealed.

Determination of Marketing Quotas

- Flue-cured and burley quotas would be based on (1) intended purchases by cigarette manufacturers, (2) average annual exports for the 3 preceding years, and (3) the amount of tobacco needed to attain specified reserve stock levels.

- USDA's discretion for setting flue-cured and burley quotas would be limited to not more than 103 percent or less than 97 percent of the amount determined by manufacturers needs, exports and the reserve stock level.

- The amount of flue-cured and burley tobacco that may be marketed without penalty would be reduced from 110 to 103 percent of the farm marketing quota.

Flue-Cured and Burley Purchase Requirements Penalty

- Cigarette manufacturers would be required to reveal the quantity of tobacco they purchased during a marketing year soon after the marketing year ends.

- Any manufacturer who fails to purchase at least 90 percent of the amount of tobacco it stated it intended to purchase for purposes of quota determination would be subject to a penalty of twice the per-pound assessment times the amount by which purchases are less than 90 percent of intended purchases.

- No penalties would be imposed if the total amount purchased by all manufacturers was at least 90 percent of the total amount of intended purchases submitted by all manufacturers. The purchase requirement for each manufacturer would also be reduced proportionally if total marketings were less than the effective national marketing quota.

- Penalties collected would be deposited in the no-net-cost flue-cured fund or no-net-cost burley account.

Assessments to No-Net-Cost Funds and Accounts

- Purchasers of flue-cured and burley tobacco would pay the same amount as producers to the association's fund or account.

- Failure to remit the assessment fee would result in a marketing penalty equal to 75 percent of the average market price of the tobacco involved.

Purchase of Inventory Stock

- The Flue-Cured Stabilization Cooperative would be required to offer to sell its stocks from the 1976-84 crops at the base prices in effect on October 29, 1984, reduced by 90 percent for tobacco from the 1976-81 crops and 10 percent for tobacco from the 1982-84 crops.

- Burley associations would be required to offer their stocks of 1982 and 1984 tobacco for sale. The 1982 crop would be offered at the base price in effect on July 1, 1985, and the 1984 crop would be offered at a price sufficient to cover the associations' costs as of the date of enactment of the bill.

- The Commodity Credit Corporation (CCC) would take title to the 1983 burley tobacco stocks by calling the loans within 30 days of enactment of the bill. CCC would then offer the tobacco for sale for 2 years. Then, any remaining stocks would be offered for sale at a 90-percent discount.

- The 1976-84 loan stocks of flue-cured and the 1982 and 1984 loan stocks of burley would be sold to manufacturers. Each manufacturer would purchase an amount equivalent to its share of total cigarette production in the United States. Purchases by manufacturers are to take place over a 5-year period for burley and an 8-year period for flue-cured.

- Manufacturers are authorized to confer with one another to carry out provisions of the bill.

Tax Treatment of Contributions and Assessments

- Qualified no-net-cost expenditures would be treated as an expense and permitted a Federal income tax deduction.

- Receipt by an organization does not constitute income to the organization.

- The tax provisions would be effective after December 31, 1984.

Review of Tobacco Grading and Disaster Crop Designation

- The Secretary of Agriculture would review the extent to which current grades accurately reflect tobacco quality and criteria for designating disaster crops and establishing grades to reflect a crop resulting from natural disasters.

- A report to the House and Senate agriculture committees would be required 120 days after enactment of the bill. USDA would be required to implement any administrative recommendations before the opening of the 1986 flue-cured marketing season.

TOBACCO ANOTHER PERSPECTIVE
Mr. Fred G. Bond, General Manager
Flue-Cured Tobacco Cooperative Stabilization Corporation

Annual Agricultural Outlook Conference
Session #13, Washington, DC

For Release: Wednesday, December 4, 1985



I appreciate the opportunity to participate in the Annual Agricultural Outlook Conference.

In reviewing the U. S. flue-cured tobacco situation from another perspective, we certainly would all agree that the issues are very complex. To gain a better understanding of recent events, we must focus our attention briefly on the No Net Cost legislation passed by Congress in 1982. This legislation, in my opinion, has had the most significant and far-reaching impact on growers of any changes ever made in the tobacco program since its inception.

Prior to 1982, the financial status and the inventory level of Flue-Cured Tobacco Cooperative Stabilization Corporation was moving forward at a workable level. On December 31, 1981, the total inventory was 489 million pounds. The outstanding debt on these tobaccos was a little over $800 million.

Unfortunately, the timing of the No Net Cost legislation coincided with numerous factors beyond our control -- a worldwide surplus of tobacco, global economic difficulties, a strong dollar, increased cigarette taxes in developed nations, and unfavorable publicity and legislation based on health issues around the world. Coupled with these factors, there has been a decline in cigarette consumption.

Immediately after passage of legislation in 1982, growers were optimistic that the change would provide a strong and aggressive tobacco program for years to come. However, it was soon apparent when the markets opened for the 1982 season that demand for flue-cured tobacco was declining.

For the first three years (1982, 1983, and 1984) under the No Net Cost law, Stabilization received an average of more than 20% of the current crops -- a total of 580 million pounds of tobacco. From a financial standpoint this translated into a principal indebtedness of $1.2 billion as of December 31, 1984. Stabilization's inventory at that time totaled 812.2 million pounds of tobacco from nine crop years (1976-1984, inclusive), with a principal indebtedness of $1.5 billion. This translated to an inventory level 300% above the norm. Accrued interest pushed the total obligation to $1.9 billion.

With interest rates accruing at approximately $10 million per month which must be added to the base selling price of every grade each month, it is obvious that prices in a short time will exceed levels beyond which any buyer will pay. Therefore, the main objective of Stabilization's Board of Directors since the fall of 1982 has been to reduce inventories because of the accruing interest rates which have a direct bearing on the amount of assessment growers must pay.

Even though negative marketing conditions prevail, Stabilization's Board has developed and made available to all buyers over the past 2 years a number of price reduction programs.

Some of the more recent programs developed were as follows:

(a) July, 1984 -- To encourage additional purchases at the auction market for the 1984 season and to generate movement of inventory, Stabilization offered 288 million pounds of tobacco from inventory at discount if the trade would purchase 720 million pounds from the auction market. Unfortunately this goal was not reached.

(b) October, 1984 -- An incentive program was developed that grouped the 1976-1981 crops and 1982-1984 crops. Under this program, the trade could purchase at discounts, 2 pounds from the 1982-1984 crop group for each 1 pound from the 1976-1981 crop group. Discounts ranged from 90% on the 1976 crop to 50% on the 1981 crop, and 10% on the 1982-1984 crops. Sales resulting from this program amounted to 87 million pounds of tobacco.

(c) January, 1985 -- The inventory level reached 812 million pounds, and sales from inventory and on the auction floor during the 1984 season were still flat. The buying trade offered no future encouragement unless the price support level could be reduced and U. S. tobacco could become more price competitive against foreign competition. With these conditions prevailing, the Secretary of Agriculture announced on February 28, a price support level of $1.699 per pound and also a 25 cents per pound assessment for the 1985 crop.

Stabilization's Board of Directors, seeking an overall solution to relieve growers of the excessive burden generated by large inventories, formulated a stock buy-out proposal. After extensive efforts by Stabilization and the trade, a tentative proposal was reached. In essence, in return for agreeing to purchase all existing loan stocks over an eight-year period, buying companies would be assured of a 1985 flue-cured crop support price level of $1.40 per pound. To achieve this

proposal, it was hoped legislation could be introduced and passed before the 1985 markets opened. However, it was soon evident that tobacco legislation could not be passed before the markets opened; therefore, it was necessary to use an administrative approach to reduce the price support level for 1985.

Under the administrative approach, the loan rate was reduced to $1.65 per pound by the Secretary of Agriculture as permitted by the Nunn Amendment. A 10-cent per pound rebate was authorized to be given to all buyers at the auction market. The 10-cent rebate would further reduce the effective loan rate to $1.55 per pound. An additional rebate of 15 cents per pound was authorized to be paid at the end of the marketing season on all purchases provided buyers purchased at least 650 million pounds of the 1985 crop. In addition, at least 125 million pounds (dry weight) of the 1976-1984 Stabilization inventory would have to be purchased by the trade under a special sales incentive offer. The intended purpose of this program was to encourage additional sales of leaf to the trade at the warehouse level which would prevent an additional build-up in Stabilization's inventory.

At this time, I can express a note of optimism on several points. First, the trade met the first requirement by purchasing approximately 659.6 million pounds from the 1985 crop. Stabilization received 132.2 million pounds or 15% of gross sales, approximately 5% to 7% below receipts from previous years. Secondly, the purchase rebate program to effectuate the purchase of 125 million pounds from inventory was mailed to all leaf merchants and manufacturers on November 15. This offer will be effective from November 18, 1985 through December 23, 1985. From all indications this offer will be successful.

Sales of tobacco from inventory from January 1, 1985 to November 15, 1985 have totaled 39 million pounds (dry weight). Adding to this the anticipated sales of an additional 125 million pounds will again bring our yearly sales figure to a respectable level. Sales during the three-year period (1982, 1983, and 1984) have averaged approximately 96 million pounds. Again, this is a good sign of a turn-around.

Another point of optimism was reached on November 15, 1985. The Senate passed the long-awaited tobacco legislation, the Tobacco Program Improvement Act of 1985. This legislation will modify the tobacco program and give needed strength to U. S. growers to be more competitive in the world market.

The Senate bill, formulated from a series of discussions with grower groups, and manufacturers, will make major modifications in the Tobacco Price Support and Production Control Program. The major provisions are as follows:

Price Support: For 1986 and future years, flue-cured and burley price support would be the level for the preceding year adjusted by changes in the 5-year moving average of market prices (two-thirds weight) and the change in a cost of production index (one-third weight). The Secretary of Agriculture can set the price support between 65% and 100% of the calculated amount.

Determination of Marketing Quotas: (a) Flue-cured and burley quotas would be based on (1) intended purchases by cigarette manufacturers, (2) average annual exports for the 3 preceding years, and (3) the amount of tobacco needed to attain specified reserve stock levels. (b) USDA's discretion for setting flue-cured and burley quotas would be limited to not more than 103% or less than 97% of the amount determined by manufacturer needs, exports, and the reserve stock level. (c) The amount of flue-cured and burley tobacco that may be marketed without penalty would be reduced from 110% to 103% of the farm marketing quota.

Flue-cured and Burley Purchase Requirements Penalty: (a) Soon after the marketing year ends, cigarette manufacturers would be required to reveal the quantity of tobacco they purchased during a marketing year. (b) Any manufacturer who fails to purchase at least 90% of the amount of tobacco it stated it intended to purchase for purposes of quota determination would be subject to a penalty of twice the per-pound assessment times the amount by which purchases are less than 90% of intended purchases. The purchase requirement for each manufacturer would also be reduced proportionally if total marketings were less than the effective national marketing quota. (c) Penalties collected would be deposited in the no-net-cost flue-cured fund or no-net-cost burley account.

Assessments to No-Net-Cost Funds and Accounts: (a) Purchasers of flue-cured and burley tobacco would pay the same amount as producers to the association's fund or account. (b) Failure to remit the assessment fee would result in a marketing penalty equal to 75% of the average market price of the tobacco involved.

Purchase of Inventory Stock: (a) The Flue-Cured Tobacco Cooperative Stabilization Corporation would be required to offer to sell its stocks from the 1976-1984 crops at the base price in effect on October 29, 1984, reduced by 90% for tobacco from the 1976-81 crops and 10% for tobacco from the 1982-84 crops. (b) Burley associations would be required to offer their stocks of 1982 and 1984 tobacco for sale. The 1982 crop would be offered at the base price in effect on July 1, 1985, and the 1984 crop would be offered at a price sufficient to cover the association's costs as of the date of enactment of the bill. (c) The Commodity

Credit Corporation (CCC) would take title to the 1983 burley tobacco stocks by calling the loans within 30 days of enactment of the bill. CCC would then offer the tobacco for sale for two years. Then, any remaining stocks would be offered for sale at a 90% discount. (d) The 1976-1984 loan stocks of flue-cured and the 1982 and 1984 loan stocks of burley would be sold to manufacturers. Each manufacturer would purchase an amount equivalent to its share of total cigarette production in the U. S. Purchases by manufacturers are to take place over a 5-year period for burley and an 8-year period for flue-cured. (e) Manufacturers are authorized to confer with one another to carry out provisions of the bill.

Other Legislation: Legislation has been passed in the House to retain the cigarette excise tax at 16-cents per pack, and to earmark 1-cent of this tax to fund the tobacco program. The penny per pack tax would be available for a five-year period.

Although there are still some obstacles to clear, we have made a lot of progress during the year. I am confident that we have turned the corner and U.S.-grown tobacco will again be a strong contender in the world tobacco market. We have placed our competitors on notice that the U. S. not only grows the best tobacco but will have a strong tobacco program for the future.

CONSUMER EXPECTATIONS AND THE OUTLOOK FOR FOOD REGULATION

Patricia Stolfa
Deputy Administrator, International Programs, FSIS

OUTLOOK '86

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I appreciate this opportunity to discuss with you some thoughts about prospects for food safety regulation in the next few years. In his concluding essay to a collection of regulatory studies, James Q. Wilson pointed out: "Some changes in regulation can be explained by reference to important changes in the underlying technology of an industry.... But by far the largest number (examined here) arose not because of a fundamental shift in technology, but because perceptions about what constituted a problem changed."

I want to suggest that technological development, consumer or public expectations and regulation are inextricably linked, and that prudent attention to changing perceptions of what constitutes a problem can help us better manage the complex regulatory issues of the future.

But let me begin at the beginning. The first meat inspection system in the United States was a consequence of embargoes placed on American meat products by European nations in the 1880's. In 1889, the U.S. Congress passed a law requiring the inspection of bacon and salt pork prior to export; however, this action was rejected by many nations who continued their embargoes of U.S. meat. A second law was passed in 1891 providing for ante-mortem and post-mortem inspection for animal products intended for export. This law resulted in the organization of the Meat Inspection Division in the Bureau of Animal Industry, the grandfather of today's Food Safety and Inspection Service, USDA. Only after this action did the various countries begin to lift their embargoes on meat products from the United States.

In 1906, Upton Sinclair's novel, The Jungle, was published. In the United States, public attention was focused by such descriptive passages as:

> "Jonas had told them how the meat that was taken out of the pickle would often be found sour, and how they would rub it with soda to take away the smell, and sell it to be eaten...also of all the miracles of chemistry which they performed, giving to any sort of meat, fresh or salted, whole or chopped, any color and any flavor, and any odor they choose...There was never the least attention paid to what was cut up for sausage; there would come all the way back from Europe old sausage that had been rejected, and that was moldy and white--it would be doused with borax and glycerine, and dumped into the hoppers and made over again for home consumption..."

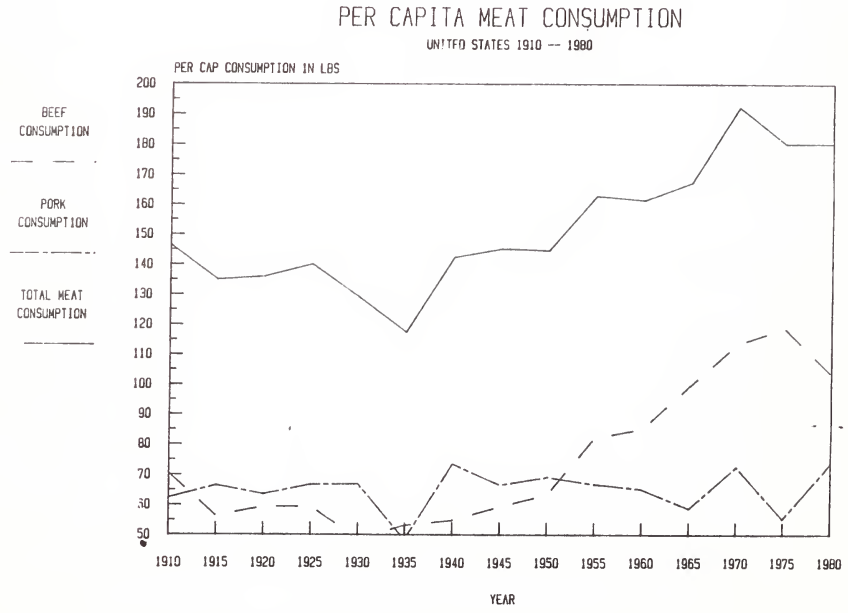
The revelation of the unsanitary and unwholesome conditions of the meatpacking industry in The Jungle resulted in consumer pressures which led to the passage of the Meat Inspection Act (MIA) of 1906. (Similar consumer pressures had much to do with the passage in the same year of the Food and Drug Act which regulated the rest of the food supply.) Over the past 79 years, the MIA, and the accompanying Poultry Products Inspection Act passed in 1957 and revisions of the two Acts passed in 1967 and 1968, have been the basis of one of the most comprehensive meat and poultry inspection systems in the world.

Although our inspection laws have remained, for the most part, stable over time, the meat and poultry inspection system has been subject to change. Some of those changes can be attributed to changing perceptions of the problem.

These changed expectations may be further considered in two categories: (a) changes in the kinds of food products demanded; and (b) changes in consumer expectations about what government regulation can and should do in the marketplace.

Let us first look at the changing patterns of product consumption in the United States.

FIGURE 1



In figure 1 we have depicted per capita red meat consumption in the United States between the years of 1910 and 1980. Until 1950, the total per capita consumption of red meat remained fairly constant. Major deviations prior to 1950 could be accounted for by variations in production cycles. However, in 1950, a major shift toward greater red meat consumption began in the diets of most Americans. This shift continued through 1970 as per capita red meat consumption increased from 145 pounds in 1950 to over 190 pounds in 1970. Increased consumption of beef in the American diet accounts for the major part of this increase. Since 1970, red meat consumption has fallen and since 1975 beef consumption has fallen rapidly. The latest USDA data, for the year 1982, show red meat per capita consumption at 170 pounds and beef consumption at just over 100 pounds; indications of the last few years show these figures have continued to decrease.

FIGURE 2

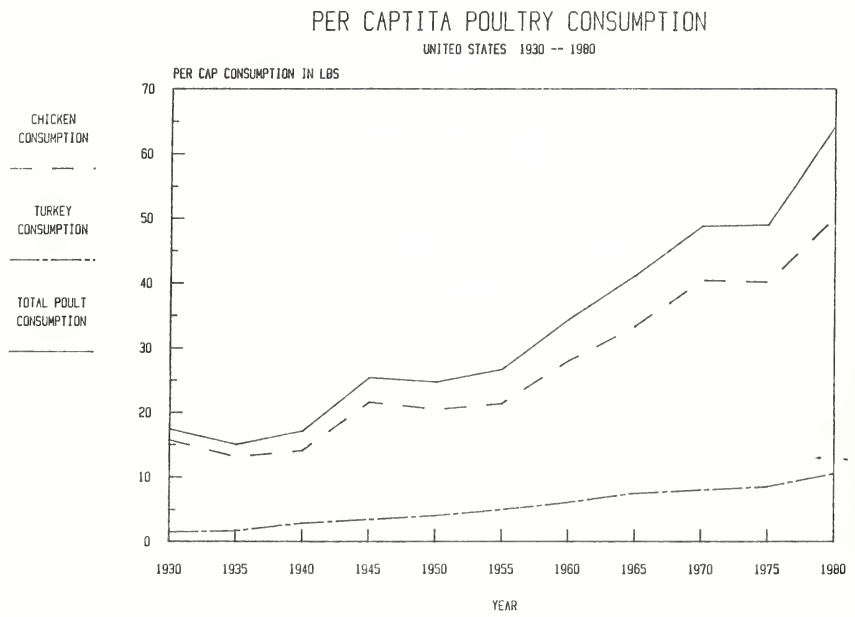


Figure 2 shows the trends in per capita poultry consumption in the United States from 1930 through 1980. This figure shows a steady per capita increase in poultry consumption since 1940, with sharper increases occurring between 1955 and 1970 and again between 1975 and 1980. Total per capita consumption of poultry in 1940 was just over 17 pounds with chicken accounting for just over 14 pounds. By 1970 each American was consuming an average of almost 49 pounds of poultry, which included 40 pounds of chicken. In 1980 this figure had climbed to a total per capita consumption of 60 pounds with chicken accounting for 50 pounds. The latest data, for the year 1982 shows this trend continuing with American per capita poultry consumption at almost 65 pounds.

Another aspect of changing consumer product expectations has related to the amount of processing which has gone into products--and as a result, their variety and ease of preparation. Consider that processed foods have become increasingly popular in the American diet; 40 years ago supermarkets offered about 1500 different items while today some present an array of more than 20,000 choices. In the meat and poultry section, similar diversification has occurred. In 1960, for example, over 18.5 billion pounds of processed meat products were prepared under USDA Federal inspection. This amount increased to over 70 billion pounds in 1980; a 278 percent rise. Further processed poultry products also increased. In 1960, over 404 million pounds of poultry were inspected for use in further processed products. This increased to almost 3.6 billion pounds inspected for further processing in 1980; an increase of almost 800 percent.

To summarize these consumption trends, until the late 1970's, Americans took advantage of the spectacular success of their agricultural production system by enjoying a diet with increasing amounts of meat and a greater variety of processed foods. (And that diet cost them a declining share of their incomes.) But by the late 1970's, the situation had become more complex. One notices the changes when looking at U.S. red meat and poultry consumption patterns. Since 1975, we have seen the leveling off of total red meat consumption and the explosion of poultry consumption. What has happened?

Dietary changes have traditionally been explained as a function of consumer disposable income, price of individual food products and their close substitutes, and individual preferences. However, this situation is made more complex in recent years by new variables. Consumers now eat more of their meals away from home and spend less time preparing those they do eat at home. American families are smaller and the general population is older.

Dr. Sanford Miller, Director of the Center for Food Safety and Applied Nutrition of the Food and Drug Adminmistration, has

suggested recently that changing product demands are also attributable to a growing awareness of the relationship between diet and health. In support of this idea, he notes that the leading health official of the U.S. government declared in 1977:

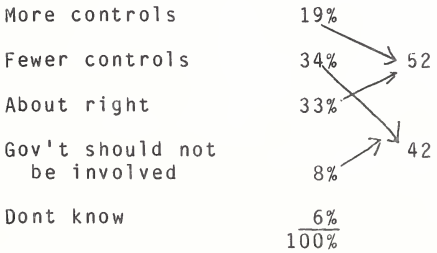
> "Many experts now believe that we have entered a new era in nutrition, when the lack of essential nutrients no longer is the major nutritional problem facing most American people. Evidence suggests that the major problems of heart disease, hypertension, cancer, diabetes and other chronic diseases are significantly related to diet. Although improved nutrition alone will not prevent these diseases, more attention is being focused on the underlying dietary habits which may be antecedent or contributing causes of these conditions."

He goes on to quote a food industry executive as saying: "As we came out of the forties and into more affluent times there was a tremendous upgrading. People switched from the casserole-type dishes of the Depression to big steaks. And now with this concern for health and fitness, new habits are evolving." The health and fitness movement, according to this executive, is probably the most significant change in the food industry since the Second World War.

At the same time that Americans have been revising their demands for food products, there is evidence that they have also been re-thinking their expectations about the role of government regulation generally, and of food regulation specifically. Over the past decade, there has been an increased concern over government regulation expressed by U.S. citizens and amplified in the American press. Although the issue of the public's attitudes toward government regulation is complex, its treatment in the press has tended to be simplistic and has led to confusion. For example, in April 1980, the Roper Organization received the following responses to the question:

FIGURE 3

"When it comes to products made by industry and sold to consumers, what do you think governments role should be?"



This response was in some cases reported as indicating that only 19 percent of the public favors more government control over industry, while 34 percent favors fewer controls. In other places it was reported that "... a majority (of the public) favors as much or more (52 percent) control as now exists, while a strong minority favors less or none (42 percent). You can see here the problems of interpretation of these and similar data and their potential for misconstruction.

Other general surveys of the early 1980's reveal these ambivalences in the public's attitude toward government regulation in the United States. However, when more carefully defined issues are raised and the public is asked its opinion of government regulation in specific cases, the findings can be different. For example, during 1980 and 1981, the Roper Organization asked the following questions:

"Do you think (the following responsibilities) are something American business will do on its own, or do you think it is necessary for the government to keep a sharp eye on business to to make it do the following?"

FIGURE 4

Responsibilities	Business Will Do On Its Own	Government Must Watch	Don't Know
Cleaning up air and water pollution	13%	82	5
Not getting together for illegal price fixing	13	80	7
Making sure products are safe	22	73	5
Advertising honestly	24	70	6
Investing money in the development of new products	60	33	7

"For each (of the following) do you think there is too much government regulation, not enough government regulation or the right amount of government regulation?"

FIGURE 5

Issue	Too Much	Not Enough	About Right	Don't Know
How chemicals are used and stored	10%	58	25	8
Nuclear energy	12	50	26	11
Health and safety of working conditions	14	37	44	6
What ingredients can be used in foods	20	30	45	5
Airline service and fares	19	18	45	17

Responses to these more specific queries indicate that the American consumer differentiates in how much regulation he wants in different areas of public concern.

Further questioning along these same lines reveals that the United States public realizes that it pays for regulation through higher prices and that the private sector can be burdened with red tape and paperwork. Nevertheless, consumers feel they are getting their value through safer products. A series of studies conducted between 1978 and 1980 by Yankelovich, Skelly and White indicate that there is strong support in the United States for less costly and more innovative types of regulation. This survey would indicate that it is fair to say that costs do matter to the U.S. consuming public.

There are further specific data which provide insight into how the consumer views the food regulatory system. In the United States, the responsibility for food safety is divided between the Food Safety and Inspection Service (FSIS) which implements the meat and poultry inspection system, and the Food and Drug Administration (FDA) which is responsible for the safety of the remaining food supply. In the minds of the American public, such a distinction is rarely made. Therefore, in order to get a true picture, it is useful to look at the information relating both to the FDA and to FSIS.

FIGURE 6

CONSUMER OPINION OF FDA/USDA

	Highly Favorable	Moderately Favorable	Not to Favorable	Unfavorable	Don't Know
1983					
FDA	31	42	15	5	7
FSIS	26	45	13	4	12
1984					
FDA	32	46	13	4	5
FSIS	30	42	12	4	12

SOURCE: Roper Reports

In 1983, and again in 1984, the Roper Organization asked consumers their opinion of several federal agencies, among them, the Food and Drug Administration and the Food Safety and Inspection Service. In 1983, seventy-three (73) percent of those surveyed had either a highly favorable or favorable opinion of FDA, while 20 percent had either a not too favorable or unfavorable opinion. The figures for FSIS were 71 percent on the favorable side of the scale with 17 percent on the unfavorable side. In 1984, the figures for FDA were 78 percent favorable and 17 percent unfavorable. For FSIS the figures were 72 percent favorable and 16 percent unfavorable.

These figures are confirmed in a survey containing similar questions conducted by the Good Housekeeping Institute in March 1983. Consumers were asked to rate the job done by FDA and USDA in three areas:

FIGURE 7

Consumers Rate Job Done by FDA and USDA in Three Areas Protecting Safety of Your Food

Very good	26.0%
Good	50.5
Fair	18.5
Poor	4.0
Don't know	1.0

Protecting the Consumer From Economic Fraud

Very good	11.5%
Good	40.0
Fair	37.0
Poor	8.5
Don't know	3.0

Promoting Better Eating Habits

Very good	13.0%
Good	34.0
Fair	34.0
Poor	15.0
Don't know	4.0

A trend survey has been conducted annually since 1974 by the Food Marketing Institute, a trade association for food retailers. This survey has found a strong belief by American consumers (88 to 90 percent), which has remained constant over the years; that the food supply in the United States is safe to eat. In recent years, the survey has asked the following questions:

FIGURE 8

"As far as you personally are concerned, whom do you rely on most to be sure that products you buy are safe--the Federal government, the state government, consumer organizations, manufacturers, retailers, or yourself as an individual?"

	1979	1983	1984
Yourself as an individual	39%	46	48
Federal Government	18	24	22
Manufacturers	17	13	11
Consumer organizations	19	6	9
Retailers	5	5	5
State government	1	3	3
Other	1	--	1
None	--	1	--
Not sure	--	2	1

This question may be interpreted to mean that while agencies get good ratings, Americans believe we are not the primary or only protectors of their food supply. In 1984, nearly half (48 percent) of the consumers in this survey report that they rely on themselves to ensure that they buy safe products, an increase of 9 percent over 1979. Twenty-two (22) percent recognize the Federal Government as an agent to ensure the products they buy are safe. Reliance on manufacturers to ensure product safety has steadily declined from 17 percent to 11 percent between 1979 and 1984.

The final responses that we will examine relate to consumer's concerns and actions relating to levels of certain substances in foods. The 1984 Food Marketing Institutes trend survey asked:

FIGURE 9

"How concerned are you about the following items being in food? Would you say that there is/are a serious health hazard, somewhat of a hazard, or not a hazard at all?"

	Serious Hazard	Somewhat of A Hazard	Not A Hazard	Not Sure
Residues	77%	18	2	3
Cholesterol	45	48	5	2
Salt additives	37	53	9	1
Preservatives	32	55	8	4
Sugar	31	53	15	1
Artificial colors	26	53	17	5

"In the past year, have you avoided buying any products because they contain...?"

	Have Avoided	Have Not Avoided	Could Not Tell	Not Sure
Additives/Preservatives	58	41	--	1
Residues	56	26	15	3
Cholesterol	54	44	1	1
Sugar	53	46	--	1
Salt	51	49	--	--
Artificial colors	42	57	--	1

Consumers consider residues as the most hazardous of the six substances examined in this question. More than three quarters (77 percent) of the respondents consider residues to be a serious health hazard. The remaining items are considered to be "somewhat of a hazard" by the majority of consumers.

I think this is a good point at which to pull together these several aspects of consumer opinion and notice how they might translate into public policy. Remember that Americans generally have a persistent confidence in the safety of their food supply and that they are generally satisfied with the job their food regulatory agencies are doing. But at the same time, they rely heavily on their own marketplace activities to enhance the protective efforts of government and others.

Of the six substances mentioned, all except residues may be the subject of either label information on some foods or diet/health information in the popular press. This means that consumers can make generally informed choices about specific purchases. Notice that only with respect to residues was there any significant percentage of consumers who reported that they could not tell if they had avoided the substance in their food purchases.

This matter of avoidance of residues would seem to be a place where consumers expect the government to act. And, in the United States, after a flurry of difficult residue incidents in the 1970's, the situation seems to have moderated. At any rate, the favorable public attitude toward food regulatory agencies in the United States probably would not be sustained unless those agencies were dealing appropriately with this issue.

But what of the future? If the U.S. food regulatory complex is to continue to be well-regarded, what issues will it need to address in the coming years? And how will technological development fit in?

First, I would suggest that the public will be faced with the questions of what are the characteristics of a safe food supply and how much are we willing to pay for it? While it is true that the food regulatory agencies generally avoided the fiscal aspects of regulatory reform in the past 10 years, it may be that they will have the same chastening experience via the deficit-driven budget reforms presently being considered. If these fundamental questions are raised then the basic standard of safety may need to be reaffirmed or redefined. In this context, productivity enhancing technologies that do not compromise the safety standard will appear very attractive. If the safety standard comes to include enhanced protection from foodborne bacteria such as Salmonella, technological innovations to accomplish this objective will be in demand.

Second, with the increasing public awareness of the relationship between personal well-being and diet, consumers will increase their demands for sophisticated monitoring and control of unwanted substances in the food supply. These unwanted substances will not be limited to traditional adulterants or contaminants but will include a range of food elements which are perceived as detrimental to human health and a high quality life. For instance, in the United States, we have seen in recent years an increased demand for more "natural" foods. Such demands have precipitated the appearance of reduced processed foods or foods with reduced amounts of substances like salt. These products present their own set of processing and regulatory control problems.

Finally, I expect that consumers will intensify their quest for information about food components or constituents. That is, a food purchaser will not relinquish the self-protection activities he now performs. However, the quest for more and more objective information will be accompanied by a demand for a more coherent contextual framework within which to evaluate the data. Consumer health and food safety information has proliferated in the United States in recent years. What has not evolved appreciably in the popular literature is a framework for evaluating the

data. This contextual framework--which might be called a practical food safety policy--will include, I think, a more realistic attitude toward risk in the food supply.

Whatever the directions that we see in future public perceptions of the problem, I expect that food regulatory systems will need to remain responsive and realistic. If they can, I am sure that present levels of public confidence can be maintained or improved.

FOOD IRRADIATION PROSPECTS
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I'd like you to think for a moment about what sorts of things the future holds for us in the food processing industry. Not even a hundred years ago, people were thinking about the same question in terms of using two "new" technologies, canning and freezing, to preserve food. And now there is a relatively new technology available called food irradiation. I say "relatively new" because the process has been around for over 50 years, but has lately come to the attention of the U.S. food industry as a possible alternative to certain chemical fumigants used to treat grains and fresh produce and perhaps to become a commonly used food preservation technology in the years ahead.

I was asked to speak to you today about the prospects for food irradiation. The subject itself is extremely important, but the timing of this conference is equally significant. For the first time in the history of food irradiation, there is a great likelihood of establishing it as a widely accepted means of preserving foods both in the U.S. and worldwide.

There is now a growing interest by the food industry, government and consumers in the use of food irradiation to kill harmful insects, destroy foodborne-disease organisms and keep food fresher longer. While food irradiation technologies have been around for more than 50 years, only recently have they become cost effective and gained prominent attention as potentially safer ways of protecting food products and public health.

In discussing the prospects for the future, I'd like to consider

three areas that will play a part in determining the role of food irradiation: (1) the industrial feasibility and acceptance of the process, (2) government approval and (3)consumer acceptance.

Industrial Feasibility

Irradiation refers to the exposure of substances to radiant or light energy. We already use radiant energy in food preparation. Both broiling and baking are processes that use infared radiation, and microwaves are used increasingly in cooking.

The form of radiant energy used in food irradiation is known as picowaves. These can be gamma rays, x-rays or electrons -- any wave of very short length that is able to penetrate foods or food packaging easily. Picowaves act by disrupting cell components thus killing harmful microorganisms or insects without raising the temperature of the food.

The process of irradiating food is simple. Food products are put on a conveyer belt-like system that carries them through a chamber containing either an electron generating machine or a radioactive source that emits a controlled level of energy. The dose of radiation a product receives is based on the amount of time it is exposed. After the food products have been irradiated, they can be immediately handled or consumed.

The first U.S. patent application for food preservation through irradiation was filed in 1905. Today, the value of irradiation technologies to help ensure food quality and safety is recognized worldwide. Over twenty countries have approved irradiation use on 31 foods with no evidence of adverse health effects. In fact, in many parts

of the world, food products preserved through irradiation are considered more desirable since they are likely to remain fresher and retain their quality for longer periods of time.

Besides the benefits of the direct irradiation of foods themselves, the technology is rapidly evolving in which irradiation is used in packaging and specialized processing methods. In fact, gamma radiation is an excellent polymerizing agent for some of the new plastics used in food packages. Plastic films, laminates and other materials such as aseptic packages are enjoying great success in many parts of the world. Irradiation can play, and is playing, a significant role in this type of food product packaging. Incidentally, packaging of this type offers some significant economic advantages in that they are usually light-weight and result in much reduced transportation costs for moving food from one area to another.

In the United States, the food processing industry is interested in food irradiation as an alternative process that might be used in various ways. As mentioned earlier, it can be used as a substitute for some chemical fumigants. Food irradiation may also be applied to foods for which no satisfactory treatment method currently exists, such as certain tropical fruits.

Consideration will also be given to using irradiation in conjunction with freezing, dehydration and thermal processing. The result would be new food products, such as juices that are shelf stable for long periods and which would require no refrigeration or freezing. They could possibly taste more like the fresh variety than is possible today.

There seems little question about the industrial feasibility of food irradiation today. Certainly it has been shown repeatedly, particularly at low-to-medium levels of radiation, that foods can be treated and remain safe, wholesome and nutritious. Food industry adoption of irradiation will depend on two considerations: whether governments will establish the legislative and regulatory framework in which food irradiation will be encouraged, and whether the consuming public will accept irradiated foods in the marketplace.

Government Approval

At the present time, a substantial number of governments -- almost 30 -- have already approved irradiation of one or more foods to move into retail distribution. Interestingly, legislation and regulations governing the use of food irradiation technology in many of these countries do not encourage the international trade of irradiated food products. Most people familiar with the role international trade can have in promoting a technology believe that in order to take full advantage of food irradiation and create an environment in which irradiated foods can move freely, it will be necessary to modify existing legislation or create new legislation in those countries where none exists.

Approval of food irradiation by most governments has come about as a result of having recognized that the available data on this process indicate it is safe, wholesome and a benefit to consumers. Some governments have been motivated by particular problems, such as those of food safety and public health. For example, some governments use

irradiation to control microbial contaminants that threaten public health or as an alternative to various pesticides.

Perhaps one of the major deterrents to the ready adoption of food irradiation in this country, as well as in some others, has been that governments have chosen to define irradiation as a food additive rather than as a process. We believe this problem is being addressed now. In fact, irradiation, as a food process, was specifically addressed in testimony I gave before the U.S. House of Representatives Committee on Agriculture on Monday, November 18.

Another problem has been that early studies of the irradiation of foods often were carried out using radiation doses which were poorly controlled and extremely high. Today, we have conquered these technological difficulties to avoid these problems and developed the scientific data to support the process.

In the United States, we have had some uses approved for irradiation of foods but that mood here generally has been one of caution. As government agencies recognize that the available data on food irradiation demonstrates its safety and feasibility, the regulatory mood appears to be slowly changing. The recent ruling to allow low-dose irradiation of pork and the anticipated ruling to permit irradiation of fresh fruits and vegetables, are the latest in a series of actions taken by the FDA to encourage the use of food irradiation in this country.

In general, governments are coming to understand the need to consider processing by irradiation as a legitimate alternative to other

forms of food processing. By doing so, they have permitted initial work to be undertaken in order to determine how and to what extent irradiation might fit in the overall processing scheme of the food industries in their countries.

Consumer Acceptance

The main barrier to the widespread use of food irradiation will be consumer acceptance of the technology. The public is inherently suspicious of a new process, particularly when the same technology has caused concern when used in an entirely different manner. For many, the concept of food irradiation stirs up concerns related to other uses of nuclear technology. Few understand that irradiation does not produce a radioactive product. Simply stated, we are faced with having to overcome a negative consumer reaction to anything that has been treated with gamma radiation. This will be the major obstacle to sucessfully introducing irradiated foods in the U.S.

Consumers are well known for questioning the safety of various methods used in processing foods. History shows that thermal processing of canned foods has not always been viewed favorably by consumers. In fact our canning industry, because of frequent attacks saying the process affected the nutritional quality of the product and was unsafe, felt compelled to seek -- and received -- an American Medical Association (AMA) endorsement of canned foods approximately 50 years ago.

Similarly the frozen food industry sought AMA endorsement for their products when questions were raised in the 1930's and 1940's regarding the safety of the freezing process. Even today both the canning and

freezing industries continue to carry on effective campaigns to showcase the good attributes of their processed products. And all of this is after so many years during which these technologies have been well accepted and offer little reason for concern by consumers.

If we have learned anything from how these other processing technologies have fared over the years, it is that irradiation is probably going to face the same challenges, if not stronger ones. A more sophisticated consumer today will ask many questions and we must be prepared to answer them fully.

The Coalition believes that the safety concerns associated with food irradiation technology at levels now being considered by FDA have more than adequately been put to rest. In the over thirty years during which food irradiation has been studied, conclusive research has determined that:

- Irradiation does not make foods radioactive, since the energy travels through the food without leaving any residues or radioactivity;
- Irradiation does not create harmful new substances in food, and the changes in food resulting from low-level irradiation are too minute to affect the safety of the food product;
- Irradiation does not create new strains of microbes which become resistant to treatment in the future; and
- Irradiation does not significantly affect the nutritional quality of foods, even at high levels.

A Department of Energy/National Pork Producers Council study of consumer reaction found some misgivings about the use of food irradiation, although there was more concern about pesticide residues. Anti-food irradiation groups have formed and are helping to fuel

consumers' suspicions. While much of the fear and suspicion is based on faulty information, the concerns are real and must be addressed through public forums with facts and credible evidence.

In order to address this public concern, the food industry in the U.S. has formed the Coalition for Food Irradiation. The Coalition was established during 1984 following the Food and Drug Administration proposal to permit food irradiation at the 100 kilorad level. The Coalition began informally as a meeting of food industry representatives who shared a common interest in food irradiation. It soon became clear that establishing the Coalition was probably the best way to achieve a mutual goal: to educate consumers about the benefits of food irradiation in an honest, credible and balanced manner.

The Coalition has developed informative materials, held media briefings, responded to anti-food irradiation claims through the media, and set up a speaker's bureau in an attempt to explain irradiation to consumers across the country. We've distributed over 13,000 pamphlets and fact cards on the food irradiation process and the Coalition to government, industry and consumers alike. Through our efforts, we are building allies and helping shape an acceptable regulatory and legislative framework which will ultimately foster consumer acceptance.

Most recently, representatives of the Coalition met with FDA Commissioner Frank Young to discuss the pending rule on irradiation of fresh fruits and vegetables and the obstacles preventing final release of the ruling.

Conclusion

All in all, prospects for the future look promising. Food irradiation is industrially feasible at this time -- it needs only the support from governments and consumers alike. I see many applications for the technology in the future. Food irradiation can make a difference in developing countries where refrigeration and other forms of preservation are simply not adequate and large quantities of foods spoil or otherwise go to waste. It can also increase international trade with countries which ban chemical fumigant usage, and will certainly offer consumers around the world a wider selection of food products. As a safe, effective, and wholesome method of preserving food, irradiation is the technology of the future.

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BIOTECHNOLOGY RESEARCH AND PLANT AGRICULTURE...YEAR 2000

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Summary

Effective agriculture production in the future will depend on a strong infusion of basic plant science research now and in the future. The key component will be the understanding and subsequent regulation of differentiation and growth. Bioconversion processing of farm commodities to produce organics will probably regain strength in the agribusiness arena.

Introduction

An estimated 400 small companies and directed components of large firms are actively pursuing programs in biotechnology and approximately 50 commercial enterprises have gone public (Sittig and Noyes, 1985). Despite failures of some of the above firms, it is felt by many economic development people that biotechnology offers the greatest promise for future investments. Biology and agriculture will belong to the 21st century. Since agribusiness is the largest single industry in the world, the attention of researchers is now directed to agricultural applications of biotechnology that will have a potential for high payout.

Before these proposed agricultural applications to products can be felt at the marketplace, considerable effort must be given to expanding our knowledge base of biochemical pathways, physiological processes and genetic mechanisms of higher vascular plants (Murray, 1982) and lower nonvascular plants. Budiansky (1984) suggests the necessity of a broad basic research approach in plant science to undergird long-term solutions to agriculture problems.

Recognition of this need has been voiced from land grant and non-land grant universities, Federal research and grant support agencies, private industry and certain "heard" political figures. The respective researchers, administrators, corporate leaders, and other pertinent players are wrenching through problems of implementation; i.e., dollars to do it with, constant or shrinking research budgets, environmental challenges, and subsequent ordeals of making change and reordering research priorities to meet objectives. This is a difficult but necessary exercise to keep U.S. agricultural biotechnology in a leadership role.

The problems before us in agriculture are complex scientifically, economically, politically, and they are intimately linked with sociological challenges through changes in agricultural practices and policies. Although 15 years doesn't sound long and predictions should be comfortable and easy, the crystal ball is hard to read because agriculture as we have known it will

probably change because the country's agriculture is at a turning point (Block, 1985).

It is not possible to specifically cover all of the problems alluded to above. A general panorama of the problems portrays familiar scenes and challenges of increased world population and food/fiber needs, which, in turn, is related to efficient crop productivity and quality, increased petroleum energy costs and related petrochemical production of fertilizers, environmental quality and improving the economic base of agriculture products.

The basic plant science areas that offer opportunities to strengthen the data base for future plant agriculture challenges are: genomic analysis; tissue and cell culture; host plant-disease interaction; rhizosphere-nitrogen, phosphorous and other nutrients; photosynthesis; and carbon assimilation and distribution; and fermentation bioprocessing. However, some pertinent advances in biotechnology have been accomplished with the current available knowledge and technology, as reported by Goodman (1985).

Genomic Analysis

A genome is the DNA quantity (haploid C value in picograms or daltons) and quality (base sequence complexity and repetition) within nuclei, chloroplasts and mitochondria (Thompson et al, 1980). The molecular analysis of nuclear genomes is important, but that information should be correlated with chromosome cytochemical studies for the purpose of establishing markers that can be followed in normal breeding and tissue culture studies as well as in the interpretation of systematic and phylogenetic group placement. These approaches have additional relevance in using DNA probes to ascertain genetic relatedness between established agronomic crops and introduced exotic germplasm. The tracking of DNA in gene transfer studies by microinjection (Griesbach, 1983) experiments also can be accomplished through these molecular hybridization techniques.

The nuclear DNA of eukaryotic plants consists of repeated and single copy fractions. The function of repeated nucleotide sequences is still puzzling to investigators after fifteen years of study. How this DNA is packaged in genomic structures is being addressed with less than rapid explanations. The answers to these questions are germane to the development of DNA transfer studies. Granted, today, molecular genetic transfer and expression studies are being performed, but, in reality, most transfer methods are formed with various degrees of anxiety simply because we do not possess enough knowledge of the structure of DNA in chromosomes, mitochrondria and chloroplasts.

It has been established for ten years or more that DNA per nucleus is not constant within a species (Miksche, 1971) and that DNA also varies during development (Miksche and Hotta, 1973; Dhillon and Miksche, 1983) as well as being quantitatively modified by altering nitrogen source and sink relationships (Artis, Miksche, and Dhillon, 1985).

These findings illustrate that DNA is a rather dynamic molecule in contrast to the previously held opinion of a static condition with the exceptions of replication and code processing.

The lack of knowledge of genomic structure and function in plant species is very evident. Much of the knowledge will be gained in the next fifteen years. This basic information is needed to augment the understanding of the control and manipulation of tissue culture processes.

Tissue Culture

Protoplast fusion, cell, tissue, embryoid and organ culture to organism are sophisticated modifications of vegetative propagation which have been used by man for several millenia. Tissue culture is based on a 19th century concept of "totipotency" which infers that each cell within an organism contains the genetic information to form a new organism. Predictable verification of this concept has been difficult. Tissue culture as a field of study reached a major role of importance in the early 1980's "Biotechnology" birth as one of several panaceas for meeting increased food and fiber needs. After much effort with many plant species, it was found that many of our major food and fiber plants are recalcitrant to tissue and cell culture methods.

The development of thousands of plants with uniform genotypes and phenotypes through exploitation of the "totipotency" concept did not occur with all plants. Instead, phenotypic and genotypic deviants were produced which initiated another research area in tissue culture called "somaclonal variation." A missed objective was turned into a positive pursuit, i.e., another method of inducing "mutations" was established. Understanding how somaclonal variation occurs at the cell level is germane to proceeding further to achieving a successful tissue culture pursuit. Genomic stability or instability of plant tissues/cells is probably related to quantitative and qualitative changes of DNA under tissue culture conditions. The tools are available to measure these changes and should be implemented early in order to develop a prediction base or a correlation of DNA gains or losses with derived phenotypic variation in cultured organs and plants. Changes in chromosomes (loss and other cytological phenomena) in cultured plants could and would impede regeneration and subsequent productive breeding and seed development. Some species display stability and others do not (Patel and Berlyn, 1982; Renfroe and Berlyn, 1983; Hakmann and Bengtsson, 1984; Hammerschlag, 1985).

The goal of producing many desired plants of superior genotypes and phenotypes through tissue culture methodology is at a critical stage. During the course of the next 10 to 15 years, a concerted effort to understand differentiation and morphogenesis using tissue culture systems should be pursued. The useful objective of tissue culture research is to develop a real working model system that can be chemically, physically and biologically regulated and will yield predictable and reproducible results. It will only be after the development of a manipulative system at cell and molecular

levels that we can begin to untangle the many unanswered questions of plant cell differentiation and development. System(s) will probably be developed within the next 15 years in concertation with developmental biologists.

Developmental Biology

This research area addresses how simple cells through ontogeny of different tissues, organs and related functions give rise to whole plants. This effort is intimately related to the tissue culture model system efforts mentioned previously, because that experimental strategy will ultimately lead to identification of genes, their expression, and regulation. By means of a controlled developmental process manifested through tissue culture, researchers will be able to ascertain how coordination operates among many genes during ontogeny.

It is obvious at this point that strong coordination among genomic structure and function, tissue culture and developmental biology researchers is necessary. In the near future, 5 to 10 years, we will begin to see the desirable cooperation. It is beginning to evolve in industrial, university and Federal laboratories.

Pest (Disease) and Plant Interaction

The resistance mechanisms of plant species to pathogens and insects remain essentially as an unknown quantity. This lack of knowledge relates directly to the scarcity of information of basic mechanisms of the genetics, biochemical and physiological processes of the pathogenicity of the disease causing organisms or products produced from them and the molecular reactions of the host plant.

The use of pesticides has been the most effective component of disease and pest control. However, the overall picture of the use of pesticides to control disease infestations is rapidly changing because of the following reasons: (1) pesticide cost; (2) pesticide impact on the environment, i.e., humans, animals and other plants; (3) registration of pesticides and associate regulatory problems, and (4) increased resistance of pests and pathogens to pesticides (Hesse, 1979; Gilpatrick, 1983).

Genetics and breeding are the desirable approaches to solving many pest problems, many of which have been successful, but the results are generally slow to attain. Chemical applications in specific cases are effective but expensive. Again, it is evident that a lack of basic information about pathogens exists as well as host-disease interaction mechanisms. A lack of communication between pathologists and breeders has generally existed over the years because of temporal and spatial factors, i.e., the coordination of breeding and pathogen effect studies over a 5 to 10 year time frame presents serious scientific man-year continuity problems. Part of the answer to the challenges before us will be met with tissue culture and molecular gene transfer technology coupled with continued breeding and genetic studies. Amerson and Mott (1982) have presented reviews of the techniques involving

in vitro methods that address disease problems and Diner, et al (1984), demonstrated effectiveness of an in vitro study with white pine blister rust.

The basic genomic structure and function of pathogens is another aspect of disease issues. Fungal, bacterial, viral and viroidal genomes are small and correspondingly more simple in structure than found in higher eucaryotes. The smallness and simplicity of pathogenic organisms suggest feasibility of molecular studies that could elucidate factors that control virulence and toxin production. Knowledge of virulence characters will aid in the specification of plant resistance mechanisms to pathogenic organisms. The complexities of biochemical reactions initiated upon pathogenic invasion of susceptible and resistant hosts cannot be understood without genetic information of pathogens.

The time is now appropriate for detailed analyses of host-parasite interactions (Ellingboe, 1984). Regulation of the phenotype by host and parasite genotypes is becoming evident. Molecular tagging and cloning specific genes from pathogens are technologies that are being used presently by a few people working on agronomic and horticultural crops. The lack of individuals who have a working capability in both plant pathology and molecular biology is one of the main hindrances to progress in this important area of research. An understanding of pathogenic and/or host genes that are important to interactions is beginning to unfold. The use of this knowledge for both research and practical applications is limitless, particularly when transformation of plants becomes routine in the researcher's toolbox. Disease resistance is an important economic trait and plant pathologists are in a unique position to attack the seemingly complex problems with rather precise molecular tools.

A very excellent review of the physiology and biochemistry of plant-pathogen interaction by Misaghi (1982) is deserving of serious reading for a general background of this interesting and important area of research. Some recent reports on host and pathogen interaction illustrate a small sample of approaches on plant species. Kosuge, el al. (1983) demonstrated that virulence of Psuedomonas savastonoi for its hosts (oleander and olive plants) is conferred by capacity for indoleacetic acid synthesis. Their results confirm the premise that expression of virulence can be controlled by metabolic regulation. The authors point out a simple model that says no type of virulence expression will be complete without information on the host targets of virulence factors.

Rhizosphere-Nitrogen, Phosphorus, Other Nutrients and Microflora and Fauna

Soils provide nutrients for plants, and extensive physical and chemical studies have been performed in the many soil science departments in major universities and research institutes and agencies. The soil-root zone ecology has been neglected for the most part until recently, even though symbiont relations between roots and fungi have been known for 100 years. The fungal and microbial organisms in the soil represent a two-edge-sword, one pathogenic, the other survival, and the balance between the two is

critical. Understanding this balance in addition to many other soil factors such as nutrient cycling, decay processes all spell a needed study of the ecosystem below the ground.

The ectomycorrhizal and endomycorrhizal fungi are an integral part of plant growth and survival. It is important that a strong fundamental research effort be addressed to the basic biology of these organisms. Subsequent and substantial practical values will be the result from work on these difficult fungi and bacteria. There is variation in the effectiveness in the fungi forms in affecting plant growth (Gardner, et al., 1984) and selection for the efficient species should be conducted. Molecular biology studies of these selected superior phenotypes/genotypes should then be performed. The investigation of fungal-host recognition, hyphae interaction with host cell walls as well as nuclear gnomic characteristics of the ectomycorrhizal fungi and nucleic acid homology with the host. The same approach with endomycorrhizal fungi, but in this case the penetration of the hyphae into the host cells with subsequent invagination and folding of the plasmolemma deserves close study of recognition factors. The practical objective is to develop or engineer mycobiants that would improve plant growth in varying soil types, thus eliminating or reducing the need for fertilizer application. Nitrogen fixation research that covers basic and applied aspects is presented by Okon and Hardy (1983).

As the root system of plants interact with the soil environment, a number of mineral uptake, deficiencies and excesses can cause stress that impairs growth. Soil site evaluations are commonly practiced, but very few have been directed at the molecular gene level. For example, there are several instances of single gene control of iron utilization efficiency in corn and tomato. The whole area of mineral nutrition, toxicity, salinity begs for exploration, particularly now that we are approaching the stage of developing "expensive" in vitro generated plant species for specific locations. Various studies of nitrogen related subjects are being actively pursued, but intense efforts on population dynamics of microflora and fauna must begin and dovetail with future molecular studies of nitrogen fixation.

Photosynthesis, Carbon Assimilation and Distribution

Molecular descriptions of the chloroplast genome have been under study for about a decade. Chloroplast membrane studies still require much additional work. Carboxylases and other enzyme systems have been separated and purified and changes of the enzyme levels under different growing and/or stress situations have been demonstrated as well as a few thrusts at following photosystems I and II. In summary, progress in addressing membrane parts and purifying the protein components and establishing their three-dimensional structure requires continued effort.

The state-of-the-art in photosynthesis, carbon assimilation and partitioning in plants is at the starting gate. Very simply put, we must now take the time and effort to find out how a plant grows. Much of the genetic engineering and other "high-tech" manipulations are for naught unless an

intense effort is expended on plant physiology and biochemistry for the purpose of understanding the major metabolic pathways and how to regulate them.

The needed basic plant science input and strengthening will take place in the next 15 years and will probably continue well into the twenty-first century. As more information is gathered and transferred to applications in plant agriculture, farming and agribusiness, as we know these endeavors today, will be significantly altered. In 1984 approximately 2.5% of the population of the United States farms and another 20% of the population is directly related to that farm output in food processing, transportation and marketing (USDA, 1984). In the future, the percent of the population of actual farmers or farm operations will continue to drop further and the agribusiness related population component will increase with the strengthening agriculture based enterprizes as girded by increased basic plant science research. In fact, a conference sponsored by the Agriculture Research Institute (Irving, 1984) which included private industry, Federal and State government agencies supported the necessity of increased basic research on: 1) growth, development, and maturation of crop plants; 2) studies concerning vulnerability of pests and beneficial organisms as related to changing crop production systems; 3) assessment of long-range effects of crop production systems on soil compaction, infiltration, pH, nutrient availability, organic matter and microbial populations; and 4) emphasis on a systematic or comprehensive approach to the study of agricultural production systems.

Another area of study that will impact agriculture is biomass conversion through fermentation and allied processing. During the oil supply crisis of the early 1970's, biomass conversion was closely examined as an avenue to by-pass the petroleum shortage and related cost increases of petroleum based products. The oil prices decreased with an increased oversupply which put biomass on hold during the late 1970's and early 1980's. However, recently and in the future, food stuff and/or biomass processing is and will probably contribute to the agriculture's productivity and economic structure.

In the short view, we must consider the surplus problem. High estimate surpluses for 1990 are 106, 17, and 5 million tons for starch, protein and oil, respectively from wheat, corn and grain sorghum, and soybeans. Bioconversion of these surpluses begs for exploitation to produce valuable products. Currently the fermentation technologies are on-line that can produce approximately 80 chemicals that can penetrate the market of petroleum based products. Results of this effort and associated research activities will in all probability lead to additional products and processes in the long term. The time has come again for bioconversion reexamination and implementation which will occur in the next 10 years.

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EXPRESSION IN PLANTS OF FOREIGN GENES CONFERRING NEW TRAITS: STATUS AND PROSPECTS

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ABSTRACT

Today's agriculture is the product of applying scientific knowledge developed over the past 100 years, including physiology, nutrition and genetics. Agriculture in the 21st century will likewise be profoundly influenced by recombinant DNA technology. Enhanced animal and plant health, and improvements in the economics of agriculture both by reducing costs and by increasing the value of products, will results. The way in which new chemicals for agriculture are developed and used will be fundamentally altered. The technology will, in some cases, replace and in other cases make possible new uses of chemicals. This paper considers the methods now available for gene transfer to plants and the use of these methods for the development of new crop varieties.

INTRODUCTION

The relatively small investment made during the 20th century in plant science, and particularly plant breeding, research has yielded major advances in agriculture. Most dramatic has been the discovery and commercial use of heterosis (or hybrid vigor) in maize. Even when advances in production practices and soil fertility are normalized, evidence clearly shows that hybrids developed in the 1930's and those of the 1980's differ significantly in yield (Russell 1977).

Other technology has had important, though less dramatic, results. These include cytogenetic manipulations, wide crosses between related wild and domesticated species, and more recently tissue culture propagation technology. Improvements in cereal grains and in horticulture have in particular benefited from such technological innovations.

The use of recombinant DNA technology, or genetic engineering, is another important step in widening the base from which genetic traits can be mobilized for use in plant improvement. The tools of recombinant DNA and the universality of the genetic code make it possible to express in plants genes from essentially any organism, including unrelated plants as well as animals, bacteria, and viruses. Proper expression of foreign genes in plants requires the use of appropriate regulatory sequences which are fused to the DNA fragment encoding the structural gene.

VECTORS FOR PLANT GENETIC ENGINEERING

Genetic engineering of plants today is based on use of a vector constructed from the essential parts of a bacterial plasmid (called Ti for tumor-inducing). A region of this plasmid is transferred in nature from the soil bacterium Agrobacterium tumefaciens to the plant chromosome (Schell & Van Montagu 1983). Expression of the genes carried on this DNA causes a plant disease called crown gall. The Ti plasmid has been disarmed by deleting genes that when expressed in the plant chromosome lead to tumor formation, while keeping the ability to be transferred (Hoekema et al. 1983). The region of the Ti plasmid that is transferred (called the T-DNA) is demarcated by specific sequences, called borders (Wang et al. 1984). Any DNA placed between these borders is transferred.

The mechanism by which the transfer of T-DNA occurs and the characteristics of the target site into which the T-DNA is inserted in the plant chromosome are not well understood. The Ti plasmid contains genes, called vir (for virulence), that are expressed in bacteria upon stimulation by an exudate from plant tissue. The functions of the vir genes are required for T-DNA transfer and integration (Hoekema et al. 1983). The vir genes need not be on the same plasmid as the T-DNA; that is, they function in trans (Hoekema et al. 1983). This property has been exploited in the development of binary vector systems in which the engineered T-DNA is manipulated on a plasmid that will replicate both in Escherichia coli and in A. tumefaciens (Hoekema et al. 1983). This simplifies the process of inserting chimeric genes into constructs containing T-DNA borders as the manipulations and much of the analysis can be done in E. coli. The T-DNA containing plasmid with appropriate antibiotic markers can then be mated into Agrobacterium strains containing a Ti plasmid with an intact vir region but lacking the wild-type T-DNA. Such a system is called binary and disarmed.

As a plant pathogen, A. tumefaciens has a wide but not global host range (DeCleene & DeLey 1976). Crown gall disease occurs primarily in dicotyledonous plants. The monocotyledonous plants, which include our major cereal grain species such as maize, wheat, barley, and rice, are not susceptible. This does not necessarily mean that transfer of the T-DNA does not occur in these crops, however. Even in dicots, certain combinations of Ti plasmid strains and plant varieties do not give rise to crown galls, but the transfer of T-DNA occurs (Facciotti et al. 1985). Several laboratories are testing whether Ti-based vectors will be useful for monocot transformation (Hooykaas-Van Slogteren et al. 1984).

There is interest in other vector methods for transferring

foreign DNA to plants, including viruses (Brisson et al. 1984), transposable elements (Federoff 1984), microinjection (Steinbiss & Stabel 1983), and direct uptake of DNA from the culture medium (or *via* liposomes) by plant cell protoplasts (Paszkowski et al. 1984). These methods, which work efficiently in animal systems are, however, not yet well developed for use in plants.

Genetic engineering in plants requires that from the cells or tissues to which genes are transferred we be able to obtain a whole plant. For an increasing number of species, including many of agricultural importance, it is possible to derive from cells grown in tissue culture entire fertile plants (Ammirato et al. 1984). This process, called regeneration, is achieved by manipulation in the medium on which cultures are grown of the levels of growth substances, or phytohormones, which govern expression of functions required for morphogenesis. Regenerated plants can be derived from single totipotent cells in culture in several plant species (Ammirato et al. 1984). With a much greater number of species it is possible to maintain in culture clumps of cells or cells in suspension that maintain the ability either to proliferate structures that mimic embryogenesis or that are organogenic (adventitious production of organized shoots and roots). Thus, plant cells can be manipulated, as by exposure to Ti-based vectors containing foreign genes, and subsequently whole plants containing the desired gene can be obtained. For many applications it will not be necessary to go to single cells for routine transformation because organized plant tissues can be exposed to the vector in culture and regenerated transformed plants obtained directly from these treated tissues (Horsch et al. 1985).

HERBICIDE TOLERANCE: A CASE IN POINT

To illustrate this technology, let me take the case of work done at Calgene under the leadership of my colleague, Dr. Luca Comai. The objective was to obtain plants having tolerance to a very broad-spectrum and environmentally safe herbicide, N-phosphonomethyl glycine or glyphosate. The herbicide acts by specific inhibition of an enzyme, 5-enolpyruvylshikimate 3-phosphate (EPSP) synthase, in the shikimate pathway for biosynthesis of aromatic amino acids (Amrhein et al. 1980). This is a pathway present in plants and bacteria, but not in animals.

The strategy taken was to seek a mutated version of the bacterial gene encoding EPSP synthase that was less inhibited by glyphosate (Comai et al. 1983). This gene was obtained by mutagenesis of *Salmonella typhimurium*, cloning from a gene library, and subcloning into plasmids in *E. coli*. Through a series of manipulations the gene was obtained on a small piece of DNA, completely sequenced (Stalker et al. 1985), fused to

regulatory sequences designed to give expression in transformed plant cells, inserted into a Ti-based vector, and transferred to tobacco cells in culture. Regenerated tobacco plants expressing the mutant bacterial gene exhibited tolerance to spraying with the herbicide (Thompson et al. 1985). The tolerance levels achieved so far are insufficient for commercial use. But this result demonstrates conclusively that a plant metabolic pathway can be complemented by a bacterial gene product, and is the first instance in which an agriculturally useful trait has been expressed *via* genetic engineering in a crop plant (Comai et al. 1985).

ENGINEERING OTHER TRAITS

The choice of herbicide tolerance as an early objective in the development of this technology was not an accident. Few desirable plant traits are encoded by single genes. In addition to herbicide tolerance, single-gene determinants are known for resistance to certain plant diseases, tolerance to other environmental stresses, and certain other characteristics such as flower color, dwarfism, and various simple morphological traits. The traits of major commercial interest, on the other hand, are often quantitative in nature; that is, they are determined by the coordinated expression of many genes. Yield, photosynthetic efficiency, the ability to make important secondary products (steroids, terpenoids, alkaloids, etc.), and the biosynthesis of important primary plant products (fatty acids, seed proteins, etc.) are examples.

It would, however, be incorrect to conclude that genetic engineering technology will not be useful in obtaining new quantitative phenotypes. For example, once the control mechanisms in a complex pathway are understood, it may well be possible to modify the pathway usefully by modulating the expression of a key enzyme in that pathway. Use of chimeric genes that are differently (e.g. developmentally) regulated, or of genes encoding enzymes that are regulated by substrate or product in a different way, are two possible strategies. Use of technology to turn genes down or off (Melton 1985) in pathways that lead to undesirable products (for example, cyanogenic glucosides in cassava) is another.

Thus, I believe that a very wide range of agriculturally desirable goals will be amenable to a genetic engineering approach. The technology is really just at its infancy. In the early part of the next century, this technology could well have an impact in many areas of agriculture.

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TRADE AND PROTECTIONISM
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I am pleased to have the opportunity to address this audience on the subject of trade.

An increase in the openness of our economy has two implications: First, trade leads to changes in the mix of products which we produce and consume; second, such changes unambiguously increase our standard of living. These are the first principles that everyone learns in a course on international trade; however, the lesson is often lost in the policy arena.

The neglect of economic principles is apparent in recent legislation which attempts to protect specific industries by restricting imports from abroad. The rationale underlying such legislation is the misperception that our national income will rise only if we adopt policies which increase our exports at the expense of imports: in other words, strength is derived from being a net exporter.

The fallacy of this view was demonstrated by Adam Smith more than 200 years ago as he attacked similar views proposed by the mercantilists. Smith, and many who followed, have shown that an increase in the volume of trade involving an increase in imports and exports improves a nation's standard of living.

There are those who agree with Adam Smith's insight but who argue that such insight no longer applies in today's modern economic society. They maintain that the world is not the perfectly competitive world envisioned by Smith; moreover, they argue that we've never had nor can we hope to have a world without some form of trade restrictions.

Opening our economy to trade only leads to the substitution of foreign for domestic production and hence to a transfer of our real income to foreigners; indeed, the increase in our trade deficit is cited as evidence that we have lost our advantage in world markets and are in a phase of economic decline. Today's mercantilists, therefore, maintain that the U.S. must adopt policies which subsidize our exports and which impose price, quantity, or other forms of restrictions on imports in order to compete in today's environment.

Trade has lead to a redistribution of production between home and foreign markets, just as the principle of comparative advantage would predict. Such redistribution has not, however, led to a decline in our national income. Those who cite the size of the trade deficit as proof of the reduction in our competitiveness and consequent decline in our national income fail to understand both the fundamental determinants of the trade deficit and its effects on the U.S. economy. Correspondingly, this failure to correctly identify the causes of the deficit result in the false hope that protectionism will solve it. In actuality, protectionism will simply shift the composition of U.S. output, helping those industries with the political power to force import restrictions, but penalizing producers of all other products. In the process, the U.S. standard of living falls, as resources are used less efficiently.

Protectionism is ineffective in reducing the deficit because of the dominant role played by international capital flows, and the saving and investment incentives which underlie them. Both U.S. and foreign savings will be channeled where prospects of strong growth, high returns, and economic stability are greatest.

The developing countries which appeared so attractive in the late 1970s and early 1980s no longer offer these prospects. Of any place in the world, the United States best meets these conditions. However, in order for foreigners to earn the dollars to acquire U.S. assets, they must increase their sales of goods to us.

The U.S. trade deficit reflects the relative attractiveness of the U.S. economy, and the resulting inflow of funds allows U.S. consumption, investment and government spending to rise more than our current income otherwise would permit. In turn, rising investment is what increases our economic capability to service this debt in the future.

This process characterized U.S. expansion in the 19th century, and similarly during the current expansion real U.S. investment as a share of real GNP is at record high levels.

Our trade deficit is, therefore, to a large degree a result of our own strong economic performance. If instead, the trade deficit were damaging our economy, destroying our industrial base, and siphoning off jobs, then why are domestic and foreign investors so willing to invest their funds here rather than abroad?

We know that businessmen make their decisions not only on the basis of current economic events, but also on the basis of future events. If businessmen expected a decline in our rate of economic growth, then we should be noticing a reduction of asset inflows from abroad and an increase in the outflows of our own assets. Current experience demonstrates that just the opposite has occurred.

Many wish to focus not upon the causes of the trade deficit, but rather on the effects. Some widely cited effects of the trade deficit include a decrease in the total employment and a "deindustrialization" of the U.S.

Recent legislation maintains that the cost of an additional million dollars ofimports leads to a loss of 30,000 jobs. In analyzing the impact upon employment, however, the relevant issue is not whether jobs will be lost in a particular industry: one would expect a loss of jobs in an industry in which we have a competitive disadvantage, but an expansion of jobs in industries in which we have a competitive advantage.

Have we been placed at a competitive disadvantage in all industries so as to experience a net loss of jobs? No, quite the contrary. Civilian employment has grown by 8 million jobs since 1980 - exactly when the great surge of imports began. We have had a net creation of jobs offsetting declines in particular sectors.

In contrast, employment growth in Europe, where many countries are running trade surpluses, has been flat for more than a decade, and even employment growth in Japan has lagged behind our own.

Employment in manufacturing has decreased substantially over the past few years. However, such a decline does not imply the "deindustrialization" of our economy. The fall in employment has occurred simultaneously with a rise in real manufacturing output.

The increase in output combined with a decrease in employment implies a rise in labor productivity. Multifactor productivity has also risen, implying that manymanufacturing firms are adopting more efficient methods of production which will allow them to compete with foreign producers. The principle of comparative advantage is indeed at work here: domestic industries which do not take steps to modernize will be replaced by domestic as well as foreign industries which do. Replacing inefficient with efficient industries will in turn raise our level of national income.

Although the current level of the trade deficit is not a level which we wish to sustain into the future, I believe that an understanding of the issues discussed above is crucial if we are to adopt sensible policies to bring the trade deficit to a more desirable level.

For example, if the trade deficit reflects differences between the U.S. and the rest of the world in current and prospective growth rates, then we should not adopt protectionist policies which close our markets and reduce our rate of economic growth. Rather, we should work toward the opening of markets abroad and encourage other nations to adopt sound policies which stimulate their level of real economic activity.

As we work to open markets abroad, we must pay attention to our own policies which restrict the flow of trade. There are a number of domestic agricultural policies which restrict or distort the flow of trade. For example, our current domestic policy with respect to raw cotton has altered the pattern of trade in international markets.

Our high target price for cotton encourages producers to maintain production at artificially high levels. In the first instance, this increased supply tends to depress world prices for cotton. In effect, we subsidize cotton exporters. Put another way, we subsidize the cotton importation by our competitors in the international textile markets. Our loan rates, however, will only let domestic prices fall so far before they reach a virtual floor. At this stage it then becomes more profitable to forfeit cotton loans to the government rather than to sell in world markets. Domestic prices are then held above world levels.

U.S. producers who use cotton in their production of textile products will be placed at a disadvantage compared to foreign producers who can buy cotton at the lower world market price. The message is quite clear: we should not adopt domestic agricultural policies which alter the patterns of trade.

The effect of setting unrealistic prices for cotton is compounded with bad economic policy in the textile-apparel industries, where U.S. producers have sought protection from imports. Restrictions associated with the Multifiber Agreement and its predecessors over the past 25 years have not resulted in an industry which can compete effectively on an across-the-board basis in world markets.

Nevertheless, U.S. output has expanded under this protective regime. Employment has fallen, but because of sharply rising productivity, outputhas grown. Trying to reverse this employment effect by reducing investment in new technology would further weaken the long-run prospects of the domestic industry.

In spite of a surge of imports in 1983 and 1984, U.S. demand has been so strong that the value to foreigners of obtaining quota rights to sell in the U.S. at our protected domestic prices also has risen. The protection effect of the MFA is rising, not falling.

Yet, the Thurmond bill now before the President seeks even tighter restrictions on imports. In addition to rolling back imports to 1984 levels or less, it proposes that the growth of imports from major supplying countries be restricted to 1 percent per year.

Such a bill would further drive up the cost of textile-apparel products in the U.S., and become progressively more

expensive in the future. In addition, foreign producers such as the Chinese have announced they will retaliate against U.S. exports if such a bill becomes law. U.S. exports most likely to be targeted will be agricultural commodities.

Another example of domestic policy which affects world trading patterns arises in the case of sugar. Under the CCC non-recourse loan program, the current loan rate for sugar is 18¢ per pound. The current world price is 3-5¢ per pound. This price differential encourages producers to forfeit their products under this program.

The high budget cost of acquiring and holding a growing stock of sugar led the government to impose country-by-country quotas on the imports of sugar. Although this policy reduced the on-budget cost of the sugar program, the economic cost did not disappear. Quotas have raised the domestic price above the world market price and reduced the total supply of sugar available to domestic consumers.

Consumers have been forced to substitute in favor of alternatives like corn sweeteners. In addition, we are transferring a part of our income, in the form of quota rents, to foreign producers able to sell in the U.S. at these inflated prices. The net economic effect of our sugar policy is therefore negative; indeed, recent estimates indicate a net economic loss of $1 billion annually.

Obviously, we are not the only nation to adopt agricultural policies which distort trade. Many in fact argue that the policies discussed above are necessary in light of the subsidies adoptd by foreigners to promote their exports.

The Export Enhancement Program is a recent example of an attempt to target nations which directly subsidize their agricultural exports. The Administration's goal is that such a program will affect only those nations which subsidize their exports, and that their loss of sales will force them to reevaluate their policies and result in both U.S. and foreign subsidies being removed.

Otherwise the effect of competitive subsidization programs is to make all exporting countries losers, and all consuming countries winners.

The conclusion we must draw from an examination of these agricultural policies and of protectionist policies in general is one which has been voiced over and over since Adam Smith's time: trade restrictions reduce our standard of living and that of the world as a whole. The key to reducing our trade deficit and to achieving an optimal allocation of resources in the world market is to open the markets of others and to push for a world-wide system of free and fair trade.

The Administration is making progress on this front through new bilateral and multilateral negotiations, in addition to other measures. We are actively pursuing another round of trade negotiations under GATT which will include for the first time agriculture.

The economic integration of world markets yields benefits which far outweigh the costs, and it is important that we re-evaluate our own policies in the context of an open economy so that we may continue to make progress toward this goal.

AGRICULTURAL POLICIES OF THE EUROPEAN COMMUNITY
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The aim of my address is to present the highlights of two recent studies the BAE has completed on the agricultural policies in the European Community and their effects on world trade and prices and the Community itself (BAE 1985; Stoeckel 1985). There are two aspects of these studies I want to highlight:

- what our findings were; and, more importantly,
- why we did the studies in the first place.

In fact I hope you will see that the approach we have adopted here goes to the root of the protectionist problem and is an essential step to secure reductions in world agricultural protectionism. Indeed, I will go so far as to say that, without this sort of analysis, multilateral trade negotiations are less likely to achieve significant gains for world agricultural trade.

First, I need to place EC agricultural production into some sort of global perspective. As we all know, many of the markets for major temperate agricultural products are depressed. In particular, world prices are depressed for sugar, rice, dairy products, cereals and oilseeds. The reasons are large stocks, static demand and the intense competition on markets, with export subsidies being common.

Let me briefly describe what has happened and look back to the early 1970s (see Figure 1). The 1970s was a decade of rising world import demand, and during this period, world trade increased by some 55 per cent. Most of this increase occurred in the developing and centrally planned economies, with virtually no growth in the developed countries.

Over the period the increases in export supplies were roughly equal to the increase in world demand. About 80 per cent of the increase in exportable supplies was from developed countries (if intra-EC trade is excluded) and roughly 80 per cent of that increase was from two sources - the United States and the European Community, each taking about half.

For the United States, the real depreciation of the dollar during the 1970s played an important role in stimulating production as did increasing world import demand and productivity growth.

For the European Community, however, market support and insulation (that is, protection) and a dualism in EC agriculture combined with high productivity growth all contributed to the increase.

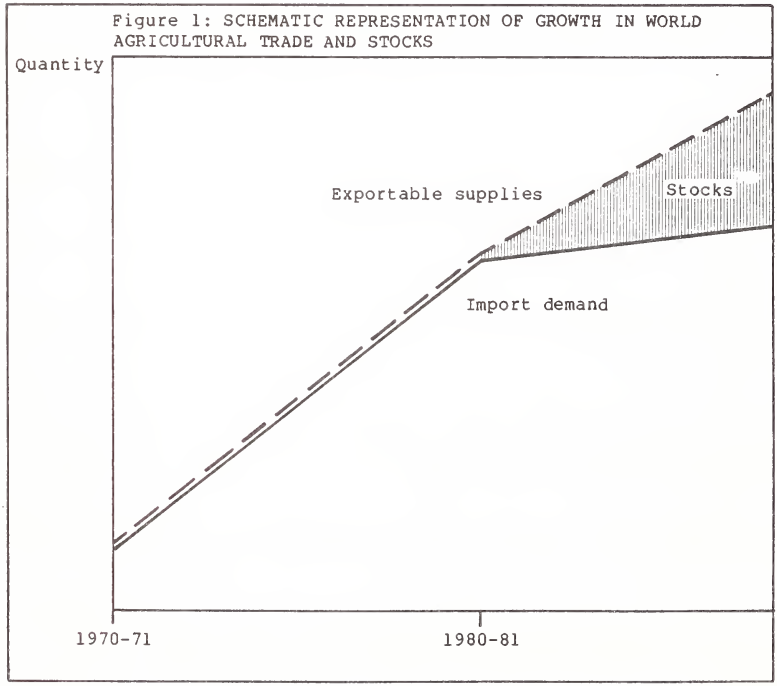
This dualism factor - whereby the price level under the Common Agricultural Policy is set to support the viability of many small producers but has given greater stimulus to investment and production by large producers - is discussed later in the paper.

Since 1980, world import demand largely stopped growing. This was a result of a combination of global recession, the international debt crisis which hit import demand by developing countries extremely hard and changing policies in centrally planned economies aimed at self-sufficiency in agriculture.

However, world exportable supplies continued to rise and stocks have risen, as illustrated in Figure 1. While there has been a stabilising of production at high levels in the United States since 1981 (partly because of the diversion programs which have so proved costly), this has not been the case in the European Community. Growth in production and exportable surpluses in the Community have continued unabated.

And here is the major problem for world agricultural trade - a large proportion of the world's producers are shielded or protected from world market developments and so there is no general mechanism to cut back

Figure 1: SCHEMATIC REPRESENTATION OF GROWTH IN WORLD AGRICULTURAL TRADE AND STOCKS

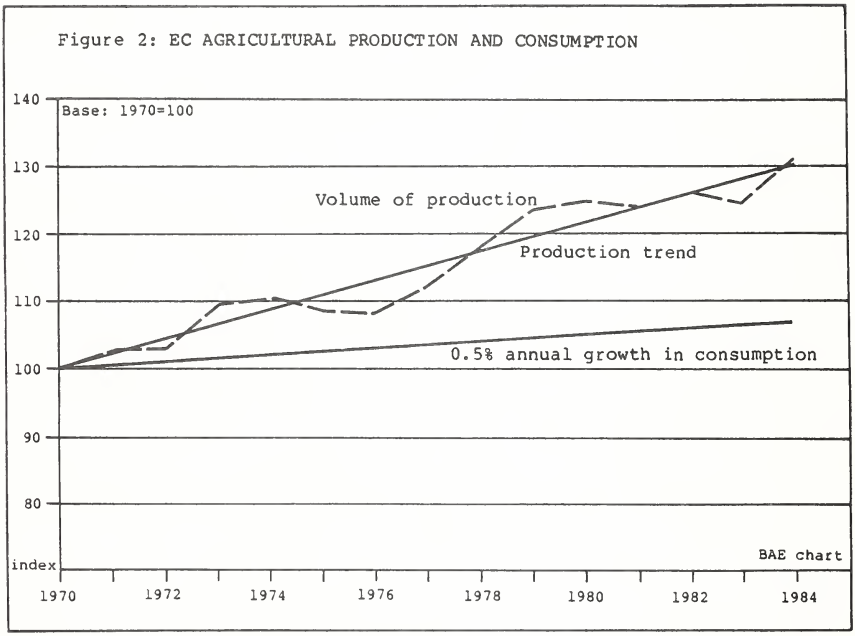


production. In some cases there have been quotas applied, but often these procedures have had little impact on reducing production.It is in this environment of rising stocks, increased export subsidies that we prepared our study of EC agricultural policies. Let me turn to the highlights of these two studies.

HIGHLIGHTS OF BAE STUDIES

In the first study and main document, we examined the nature and effects of the Common Agricultural Policy and assessed its importance for world agriculture and for other agricultural exporting nations like Australia. We also made an assessment of the policy alternatives and the prospects for reform of the CAP in the future.

One of the most striking things about the Common Agricultural Policy is the effect on the trading position of the Community. Under their agricultural policies, production has risen much faster than consumption, as shown on Figure 2, and so stocks have risen, as have exports. This has led to a massive turnaround in the agricultural trading position of the Community.



The Community has changed from being one of the world's largest importers of temperate zone agricultural products to now being the world's second largest exporter. This change in trading position has been achieved at high cost to both the Community and agricultural producing nations as a whole. It is estimated that, over the past decade, about 60 per cent of the value added by agriculture in the European Community has come from consumers and taxpayers by way of transfers and subsidies. These have amounted to between 60 000m ECU and 70 000m ECU a year, in 1984 values.

Of significance as well is the fact that only one-quarter of this 60-70 billion ECU transfer comes from the EC budget. The other three-quarters comes from national government expenditures and the consumer by way of hidden transfers. This is an important point because one of the main functions of the European Commission is to administer the EC budget and a lot of the so-called reforms are directed at solving the 'Budget Crisis'.

So what we have is most of the effort and activity being focused on only one-quarter of the problem. And we estimate that three-quarters of this assistance goes to the largest one-quarter of farms.

It is further estimated that EC agricultural policies, which have stimulated production and subsidised exports, have depressed world prices of major temperate agricultural products by, on average, some 16 per cent. In addition, we found that EC policies have destabilised world prices more than have the protective policies of other countries.

This lowering and destabilising of world prices has had adverse effects on other agricultural exporting nations, particularly countries dependent on agricultural exports. The cost to the Australian economy, for example, has been estimated at almost $A1000m a year in recent years.

The effects of EC policies on world agricultural trade are a consequence of the European Community pursuing domestic policy objectives with a system of largely open-ended price support. It is concluded that EC policy objectives could be achieved at substantially lower cost, both to the Community themselves and to other countries. That conclusion is reasonably well known and the more interesting question is:

> If there are better policies in terms of lower costs to the Community itself, then why aren't those policies being pursued now?

The answer to that question goes to the heart of the problem - how can agricultural protectionism be reduced in practice?

If the Community, or anyone else for that matter, is not pursuing what we might call 'better' policies, it must be either that people do not appreciate the real costs and benefits of the CAP and the alternative policies available - that is, they do not believe that the alternatives are in fact 'better' - or it must be that there are real political and institutional factors preventing or substantially limiting change in the right direction.

It is true that institutional rigidities certainly do operate. However, when we came to examine whether there were assessments of the costs and benefits of the CAP, we found a surprising lack of any systematic studies covering the whole Community. In particular, there was a lack of an assessment of the benefits and costs of alternative policies that may be put in place to achieve their objectives. And, in fact, it was at the conference in Brussels when we released these studies, that the opening speaker and a former Commissioner for Agriculture, Mr Lardinois, made his major criticism: he said that the BAE study had not focused on the real costs of the CAP to the economy of Europe as a whole.

There is some truth in that and it explains the second study that was prepared (Stoeckel 1985). Let me now turn to a brief summary of the conclusions of this study and why it is so important in terms of assessing and enhancing the prospects for reform of this very important world agricultural protection issue.

As I mentioned before, the increase in production and restriction of imports in the Community has seen a transformation from its being the world's largest importer of temperate zone agricultural products to the world's second largest exporter. That is a massive trade turnaround, and it could be expected that it would have general equilibrium effects on other traded sectors.

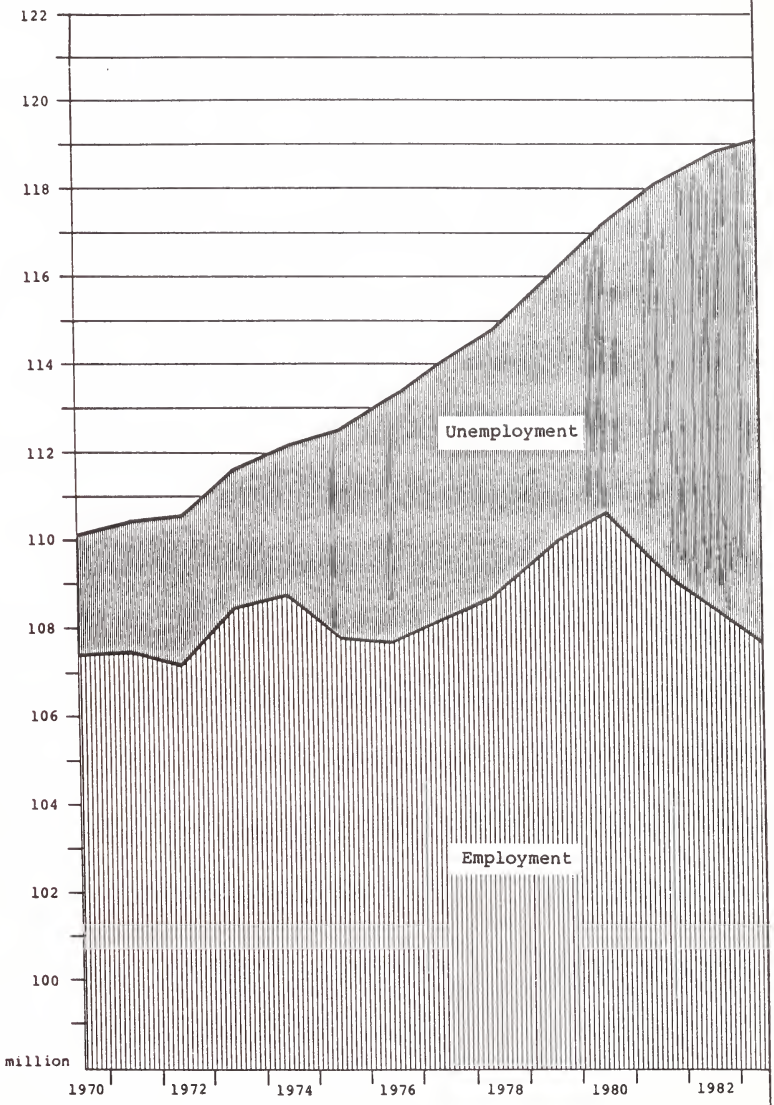
Basically, if a country stops all imports, it will eventually stop all exports - this is the familiar proposition that an import tax acts as an export tax. The European Community has by restricting agricultural trade, in effect, placed a tax on net exports of manufactured goods. And while the imports of agricultural products have contracted in the European Community, as shown in this Figure 3, the imports of manufactured goods have expanded considerably, particularly equipment goods.

Further, the EC share of exports in equipment goods in OECD trade has fallen over the last decade and a half, while the share of imports has risen. That is, there has been a major loss of competitiveness in the EC manufacturing sector.

At the same time, manufacturing output has tended to stagnate in the Community and employment in that sector has fallen considerably.

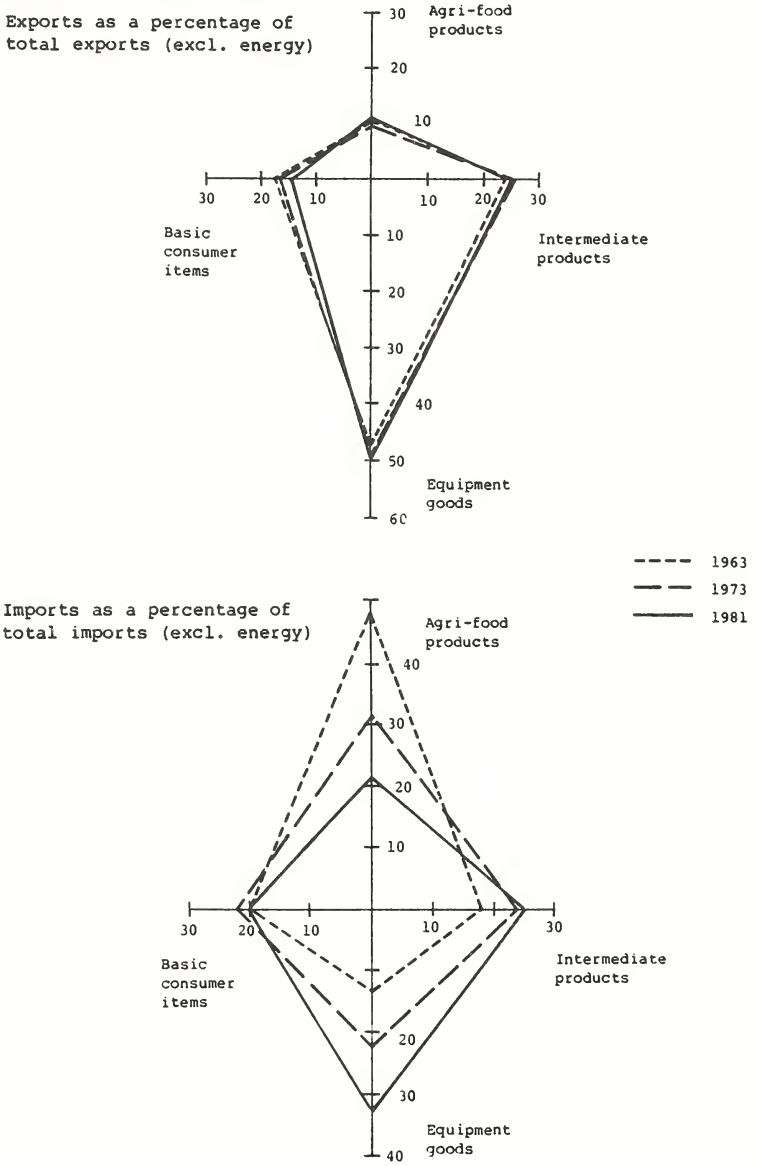
Standard theory suggests that protection to agriculture would have contributed to the unemployment problem in Europe, which is quite considerable. Unemployment is now 11.5 per cent, or 12.5 million people, and there has been virtually no increase in the number of people with jobs over the last decade. This unemployment is shown in Figure 4. Of course, a lot of defenders of the Common Agricultural Policy will argue that protectionism of agriculture has saved employment in the rural sector. Further, it is argued that reform of the CAP is not possible while there is this high level of unemployment. And this is where this dualism of the European production becomes important.

Figure 3: EC-10 WORKING POPULATION



Source: Eurostat (1984).

Figure 4: COMPOSITION OF EC-10 TRADE



Source: Commission of the European Communities (1983, pp.108-9).

Over one-half of the output from European agriculture comes from just 10 per cent of the farms. These large farms are more efficient and, with the technological bias toward their production system, output has expanded considerably. This expansion has occurred by increasing the use of large scale machinery and through new technology, including higher yielding varieties, and the use of more inputs like fertilizer, but not from additional labour.

At the same time, these large farms have taken over the more numerous smaller farms. So, in effect, the subsidies to agriculture are encouraging the shedding of labour from agriculture and, in the Commission's own words, there has been 'a loss of 1 job out of agriculture for every minute over 20 years' (Commission of the European Communities 1984). That is, there has been a shedding of jobs from agriculture and no new jobs have been created as a result of the loss of competitiveness in the manufacturing sector in Europe through the trade distortion effect I mentioned earlier so unemployment has been adversely affected.

By using a small applied general equilibrium model for the European economy in the study (Stoeckel 1985), I estimated that the CAP has probably cost Europe around one million jobs. If that is true, it implies that, contrary to one of the arguments often put against reform of the CAP at present, namely that policy reforms are not possible at times of high unemployment, the reverse is probably true - not to reform the CAP is probably exacerbating the unemployment problem in the long term.

Now why is that analysis so significant?

The reason is that people only change when there is an incentive to change. People will have that incentive to change if they have generosity or goodwill to others or if they believe it is in their own self-interest to change. Self-interest has always proved to be a more potent force than generosity toward others.

For small economies like Australia, the mere exhortation or complaining that policies of one country are damaging is not enough to lead to change.

For large countries like the United States, however, external pressure can be more effective because there can be the implied threat that if changes are not forthcoming it may end up costing something. And back comes self-interest in a negative sense.

However, it has to be recognised that, while external pressure by a country like the United States is important, it has its limits. The reason is that the Community is a diverse collection of ten member states (at the moment) and one of the factors promoting reform is the different interests of some countries, particularly the United Kingdom as they have been net contributors to the CAP.

One thing a costly 'trade war' could do is provide a common external threat to the member countries - and act as a unifying force. It would give a political reason for increasing financial resources from the Community budget to fight this new 'external threat', to blame someone else and it could in fact have the opposite effect.

Our conclusion was that self-interest was more significant as a means to change and what we were demonstrating in these studies is that there are alternative policies within the Community under which their objectives could be achieved at a lower cost.

Ultimately, the strongest and most effective opponents of the CAP will be the Europeans themselves, who are largely unaware of what the agricultural policies are actually costing them in real resource terms.

The proposed new GATT round of trade talks would be most significant here because such negotiations recognise the value of self-interest. The significance of multilateral talks aimed at reduced trade protection are twofold. First is the obvious point that the net gains from multilateral reductions are greater than unilateral reductions. Second is the fact that the structural change required under a reduction in protection is more likely to be successful under multilateral reductions than unilateral reductions because of the dynamics of the adjustment process. Under multilateral reductions the benefiting industries expand through an increase in demand as well as through access to resources displaced from those industries disadvantaged by the changes. That is, resources are 'attracted out' of the protected industries.

Under unilateral reductions, however, the expansion of benefiting industries occurs through attrition and contraction of the protected industries. That is, resources are, in the first instance, 'driven out' of the protected industries.

For these reasons, multilateral trade liberalisation should be politically more 'saleable' and should have a higher chance of success. An important requirement in the multilateral process is that countries are prepared to make concessions. Unless participants fully appreciate the benefits of unilateral trade liberalisation and are prepared to make concessions, a strong incentive is built into the negotiation process to 'do well' at the expense of others and this can serve to militate against significant liberalisation being achieved. The difficulty is that the net gains to a country from somebody else reducing protection can easily appear to outweigh those from unilateral reductions, where significant structural adjustment is involved. The desire to 'do well' out of the negotiation process creates an incentive to go into a new round with a 'high base' and to first 'concede' reductions in protection that are meaningless. Also, trade negotiations tend to focus on the measurable levels of protection, and hidden protection can be overlooked.

Ultimately significant liberalisation in agricultural trade can only be attained by changing domestic policies. Multilateral negotiations are a vitally important step in increasing the pressure for change on those domestic agricultural policies. Trade liberalisation, therefore, is very much a long-term strategy and, to enhance its prospects, there is a need for those countries to recognise that a reduction in protection is in their own interests and a need to promote the search for ways to enable these countries to achieve reductions.

In this regard, it is important to recognise that one of the most practical, powerful and cost-effective means for achieving this is the promotion of research and discussion on the costs and inefficiencies of the agricultural policies adopted by other countries - particularly the costs borne by the countries which impose them.

That was the motivation behind the studies of the agricultural policies in the European Community and the contribution they make.

It is when there is the coincidence of internal debate on reform with international debate through trade talks that the best chance of significant improvement in freeing world agricultural lies.

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Need For Freer Trade: Grains

By

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at the

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U.S. grain farmers can produce 50 percent more grains and oilseeds than the United States can consume. With production capacity growing at least twice as fast as domestic demand, they will reach a point in this century when they can produce twice America's domestic needs.

So, U.S. grain agriculture must export to be a dynamic, growth-oriented sector of the American economy.

While our need for exports is clear, recent events have called into question whether the export market can grow to meet that need. Does the world need America's grain? Can the United States compete against newly emerging suppliers? Can that competition be put on an economic footing, largely free of import barriers or export aids?

Those are the three questions I would like to address in discussing U.S. grain agriculture's need for freer trade.

Is the Market There?

The first question is: Does the world need America's grain? Is there still a market out there?

There is a market, but it is neither the market that ran away from our capabilities in the early 1970s nor the shrinking market of the early 1980s. Rather, it is a market that requires flexibility and foresight to achieve its potential.

The U.S. grain economy has learned since 1980 that it is not recession-proof. World grain use has fallen below trend since then. This is not a pattern likely to be sustained forever, but it has dealt a real blow to farmers' and exporters' expectations.

Exports have felt the brunt of this slackening in the growth curve for a variety of reasons. At the top of that list must be customers' fears of uncertain supplies or skyrocketing prices. These fears came out of concerns about a "food crisis" in the early 1970s. They motivated many importers to shift towards greater self-sufficiency, even at relatively high cost.

Moreover, a general collapse in commodity prices and shrinking export opportunities have sharply reduced the buying power of many developing countries. Their burdensome debt loads added further pressure to curb imports.

As a result, total world grain trade has declined modestly since 1980 after doubling in volume during the 1970s. This stagnation is reversible, however.

Sustained economic growth, more stable foreign exchange rates, ample grain supplies at competitive prices, freer trade policies and reductions in the debt overhang can rekindle both demand growth and reliance on imports. In other words, export opportunities are still present, if the policy environment is adjusted.

What can result in these circumstances is not a demand explosion fueled by inflation and easy credit, as was the case in the 1970s. But, we can look forward to an environment in which population and income growth can build healthy demand expansion. World grain demand could grow at 1.5 billion bushels per year. Such expansion offers good growth opportunities for exporters prepared to serve it.

Can the U.S. Compete?

This leads to the second question: Can the United States compete economically against other potential suppliers of this demand? The answer is, yes it can.

Let's look at that competitive marketplace. During the 1970s, world grain trade grew faster than world grain

consumption. The share of world grain use met by imports grew from 9 percent to 14 percent. In other words, exportable supplies grew faster than domestic production in importing countries. We too often overlook the fact that our competition, at the margin, is really local agriculture in importing countries, not other exporters.

Local grain producers, especially in rapidly developing economies, typically face large hurdles in expanding their output as fast as local demand. Achieving self-sufficiency goals becomes increasingly unrealistic, economically and physically.

As local consumption growth outstrips local production, the impact on exports is dramatic. A multiplier effect occurs because exports are a relatively small, residual market compared to total world use. For example, U.S. exports represent only about 7-8 percent of total grain use outside of the United States. So, a one percent jump in non-U.S. demand can translate into a 12 percent growth in demand for U.S. exports. This suggests the magnitude of the opportunity, if the United States can be the preferred supplier to this residual demand.

To be that preferred supplier, the United States must beat other exporters to the business. Since 1980, we have not done well in that competition. U.S. exports of wheat, feed grains and soybeans have fallen 17.5 million tons while our competitors' exports in that period rose 16.5 million tons. Can we meet that competition--and beat it?

We have the economic edge, if our price support policies will allow it to work. Cargill recently completed a study of production and marketing costs in the United States and in other major exporting countries. Several conclusions emerged.

First, U.S. variable or incremental costs of producing wheat, corn and soybeans are generally lower than those of our major competitors. Second, our marketing costs--the costs of putting grain into export position--also are lower. Combining these two, the United States can put additional bushels into export position cheaper than any other exporter. Only Argentina could challenge this position by eliminating its export taxes, but then, it would have to find other sources of revenue to fund government services.

Current U.S. price support policies, however, are negating this advantage. They are guaranteeing prices for our competitors in excess of their total exporting costs--variable production costs plus land costs plus

marketing costs. In effect, our loan levels are guaranteeing profitable returns to our competitors' investments in new export facilities, expanded acreage or more intensive cultivation. Small wonder that they have been expanding at our expense since 1980.

The point of this analysis is not that the U.S must lower its loans to variable-cost levels. The point is that lowering loan levels below our competitors' total costs of export will discipline them much more than us. We have idle land and idle handling capacity that we can bring on stream at low cost. Our competitors are producing and exporting at capacity. They must make further capital investments, if they wish to expand. We can slow down--and in some cases stop--competitive expansion by exposing them to the threat of strong U.S. competition at levels that do not justify investments in expansion.

Again, the important point is that the United States can expect to be successful in competing for additional world grain import demand, if its own policies permit it. Market-oriented U.S. loans would force competitors to evaluate future expansion not against a guaranteed return but against the very real risk that they will bear large losses from uneconomic expansion.

In that environment, the United States could expect to be the preferred supplier to rising import demand. It would gain in two ways. It could expect to increase its market share, as it did under similar policies in the 1970s. At the same time, it could expect that market prices would actually rise to profitable levels as surpluses are worked off. The reason is that uneconomic foreign expansion would then become self-defeating rather than automatically profitable, as it is now.

Can the U.S. Achieve Freer Trade?

But, even if economics are on our side, will trade policies--here and abroad--permit a freer flow of goods? The drive for freer trade currently seems hemmed in on all sides--by unfair export competition, by barriers to imports and by a general drift toward protectionist feelings.

The problem of unfair export competition is in part reality, in part perception. The GATT rules governing agricultural export subsidies clearly are looser than for manufactured goods. GATT dispute settlement-mechanisms make enforcement even of these loose rules questionable. The European Community has exploited this situation to America's disadvantage. Particularly disturbing is the absolute protection the Community's export subsidy

provides. The EC increases it to whatever level it takes to make sales.

Beyond the Community, however, the evidence of unfair competition becomes more frail. Canada provides a rail transportation subsidy, and there may be small export aids scattered among other countries. But two of the fastest growing challengers--Argentina and Brazil--actually tax their exports at significant levels.

Import barriers to grains, on the other hand, are real, sizable and widespread. Perhaps of greater concern, these, too, tend to provide absolute margins of protection. No price level buys the business, at least in the short run. For example, the European Community has guaranteed high prices to its farmers, fully protected by variable import levies. Between 1978 and today, such agricultural protection resulted in a 40-million-metric ton swing in its net grain trade. It moved from a 20-million-ton net importer to a 20-million-ton net exporter in that period.

Unfortunately, other countries are copying this example. Japan, Korea and Taiwan are major markets for U.S grains. Between 1974 and 1984, their coarse grain imports from the United States grew from 15.3 million tons to 28.2 million tons. This is good business, which we appreciate.

Yet in the same period their degree of agricultural protection increased. Their coarse grain imports from the United States would have grown substantially more, if their degree of protection for domestic agriculture had declined rather than risen.

The overriding agricultural priority in future trade negotiations, therefore, has to be placing a limit on the degree of protection countries can provide their agricultures--both on export aids and on import restraints. By fixing a maximum degree of protection, it becomes possible to earn markets by price advantages. It also becomes possible to negotiate those margins of protection down over time.

There would be a bonus in this, as well. Doing away with absolute levels of protection will provide more stability to commodity prices. Secure supplies at stable prices would encourage more reliance on imports rather than expensive self-sufficiency policies in key markets.

The third hurdle in the way of progress toward freer trade is a growing pattern of protection and national preference in all economic sectors. The United States

has done better than most in resisting this disease, but it is gaining strength here as well.

Protectionist attitudes are easy to identify and oppose in one's neighbor, harder to deal with when one's own livelihood is affected. That is why unprecedented trade deficits and a strong dollar have proven so troublesome in sustaining America's traditional commitment to freer trade. They have made the tantalizing promise of protection attractive to more Americans than ever before.

U.S. grain agriculture is rightly concerned about this situation. It understands that trade must be a two-way street. We cannot sell more, especially to developing-country markets, while throwing up barriers to their exports to us.

As one example, U.S. agricultural exports to textile exporting countries affected by the so-called "Jenkins" bill were valued at $13.5 billion last year. Whether that market continues to grow depends importantly on their access to U.S. markets for their exports. If that access is unduly restricted, their grain-import growth will slow. And, some of those countries could turn to other suppliers in an effort to make their point more clearly.

So, U.S. grain agriculture has much to gain from negotiating trade barriers down. It has much to lose by building barriers up to the goods our customers have to sell us.

Moreover, the solution for the workers, industries and communities hurt by imports does not lie in propping up failing causes. It lies in correcting the macroeconomic policies that drive economies out of alignment. More cooperation along these lines can help contain the pressures that are currently straining the trading system while preserving the foundation for vigorous growth in the private sector. A U.S. economy that is growing and holding its own in world competition would provide ample room to accommodate the necessary shifts in economic activity caused by trade.

There is much the United States itself can--and must--do to bring this about. At the top of that list must be curbing federal budget deficits.

But, we no longer are either an overwhelming economic power or an island lying outside the major lanes of trade. Joint action is needed among the major trading nations to keep currencies in proper alignment, to

provide the demand stimulus for economic growth, to lighten the debt-servicing burdens of key developing countries and to open another round of negotiations aimed at trade liberalization and expansion.

No doubt, each of these tasks alone is challenging, and together they can seem at times overwhelming. It is tempting to accept the arguments offered for doubting the success of such cooperative efforts. It is tempting to harken to pleas that we take care of our own first.

But, such pessimism is neither justified nor wise. Compared to one or two years ago, we have made progress on currency issues, economic policy cooperation, LDC debt problems and launching another trade round. We may even be getting ready to address runaway budget deficits. Progress may be maddeningly slow, but it is occurring.

Conclusion

U.S. grain agriculture has a vital stake in sustaining this cooperative, liberalizing policy thrust. Its market growth lies abroad. That potential is large. Achieving that potential is blocked largely by ill-conceived protectionist policies--both in agriculture and industry, both here and abroad.

The grain sector of American agriculture has long been a strong voice for outward-looking, freer trade policies, for good reason. Those reasons are as compelling as ever. The voice needs to be as strong as ever.

Thank you.

THE OUTLOOK FOR COTTON
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History Repeats

The U.S. cotton industry faced a situation in the early 1960's similar to the current one. Under the old 2-price cotton program, U.S. prices were supported above market clearing levels with loan rates of more than 30 cents a pound. Partly as a consequence, U.S. exports slumped from 7 million bales in 1960/61 to 3 million in 1965/66. Further, cotton's share of U.S. mill use dropped from 65 percent to 53 percent during those seasons. With planted acreage exceeding 14 million each year during the early 1960's, 1965/66 ending stocks rose to a record 17 million bales, giving a stocks-to-use ratio of 1.35 (figure 1).

Yet, within 2 seasons cotton stocks were 10 million bales lower, and during the 1970's, stocks-to-use ratios were low enough that farm prices regularly exceeded loan rates by 40 percent or more. The turn-around for the cotton industry coincided with the implementation of a new cotton program in 1966. The loan rate fell to 21 cents a pound that year, and an acreage diversion program brought planted acreage down to 10 million. Reduced plantings, large abandonment and lower yields, rather than increased disappearance, were the primary reasons for the lowering of stocks after 1965/66. Still, the new program positioned the U.S. cotton industry to take advantage of increases in world demand beginning around 1970.

The parallels with the present situation are strong. Due to the influence of the U.S. loan rate, U.S. cotton prices in Northern Europe are some 40 percent above foreign prices, and U.S. exports may fall to 3.5 million bales in 1985/86 as a result. Mill use will be somewhat stronger this season than last because of an increase in cotton's market share. Although, the improvement may be short lived. Retail sales are flat but textile imports have begun again to grow. Total use is forecast at little more than 9 million bales this season, but production will be close to 14 million. Consequently, 1985/86 ending stocks are expected to rise to nearly 9 million bales.

Foreign Cotton Outlook and Situation

Production

Foreign production in 1985/86 is estimated at 68 million bales compared with 74 million last season (table 1, figure 2). Production in 1985 is expected to slide about 5 million bales in China, 1 million in Brazil, 400,000 in Mexico, 300,000 each in Pakistan and Turkey, and about 200,000 in Australia.

China introduced measures in 1985 aimed at reducing cotton output and increasing quality. China announced a national procurement contract level of 19.5 million bales, but actual production is expected to reach 24.0 million, a level only exceeded by last season's record crop. Pakistan, Brazil, Turkey and Australia, all important producers, report moderately smaller acreage.

A development which bodes well for future U.S. exports is that 1985 production is expected to decline in almost every Western Hemisphere country except the United States. However, an offsetting development is that cotton production in Europe, Africa, and the Soviet Union is forecast higher in 1985/86 by a combined 1.3 million bales--almost equal to the decline in the Western Hemisphere.

The declines in production are caused more by changes in area than in yields. Cotton area in foreign Western Hemisphere countries declined 13 percent from 1984 to 1985, and similar declines occurred in China, Pakistan, and Turkey. Plantings rose in Europe and Africa.

Cotton plantings are falling in the Western Hemisphere as area devoted to feed grains rises. For instance, cotton plantings in Argentina are dropping 4 percent while corn plantings are up 11 percent. EEC cotton subsidies led to increased plantings in Greece in 1985. The increase in African plantings occurred almost entirely in Egypt and Sudan, where large irrigated operations are being developed with World Bank funds.

Table 1--Changes in foreign cotton production, acreage and yields, 1984 to 1985

Region	Production		Change	Harvested area	Yield
	1984	1985			
	Thousand bales			Percent change	
Western Hemisphere	8,648	6,934	-1,714	-13	-8
Europe	965	1,163	198	16	4
Africa	5,550	6,009	459	3	5
Asia 1/	59,091	53,683	-5,408	-3	-7
Foreign	74,254	67,789	-6,465	-3	-6

1/ Includes USSR and Australia.

Foreign Consumption

Foreign cotton consumption will rise to about 66 million bales in 1985/86, a record (table 2, figure 3).

Improved prospects are reported in the major exporting countries, while cotton use in net, raw-cotton importers as a group will fall about 150,000 bales. European markets report that a slight consumption increase is anticipated this season. In the European Community, Italy reports that a depressed spinning sector, due to increased textile imports, is expected to

reduce 1985/86 mill consumption. West Germany reports that conditions are improving in the spinning industry and consumption should be up slightly, while France reports that a slow down in domestic textile demand should offset a more satisfactory textile export picture.

Table 2--Ending stocks and consumption in foreign countries

	Stocks			Use			
	Foreign	China	Foreign Less China	Foreign	China	Foreign Less China	Stocks-to-use 1/ ratio
			Thousand 480-lb bales				
79/80	18,172	1,548	16,624	59,648	14,100	45,548	0.36
80/81	18,651	2,392	16,259	59,994	15,100	44,894	0.36
81/82	18,692	1,892	16,800	60,805	16,200	44,605	0.38
82/83	17,209	3,017	14,192	62,679	16,400	46,279	0.31
83/84	21,887	7,767	14,120	62,984	16,000	46,984	0.30
84/85 est.	38,144	19,867	18,277	63,579	15,500	48,079	0.38
85/86 for.	42,769	25,167	17,602	66,116	17,200	48,916	0.36

1/ Foreign Less China

Conditions are less favorable in Asia. Japanese consumption is forecast down moderately to 3.0 million bales as the result of high imports of yarn and fabric. South Korea reports growing textile competition from China and other lower-wage Asian countries, limitations on textile import growth in developed country markets, and a stable domestic textile outlook will hold consumption levels flat this season. Little change from last season is expected in Thailand, while Taiwan reports pessimistic textile export sales and increasing textile inventories are expected to reduce consumption to about 1.1 million bales.

Encouraging 1985 domestic cotton textile sales, a new policy allowing retail installment sales, and the decision to sell 2.3 million bales of surplus cotton stocks at a subsidized price for padded quilts and clothing, are expected to reverse the Chinese cotton consumption declines of 1982/83 and 1983/84. A policy installed in late 1982 increased the cost of cotton to mills. Increasing consumer preference for easy care blended and manmade fiber textiles was noted during those two seasons. However, forecast 1985/86 Chinese consumption is 17.2 million bales.

A moderately larger Soviet crop is expected to increase supplies available for domestic consumption, and strong domestic demand for textile products is reported. Cotton use in Egypt and Pakistan is rising because their supplies of cotton are also larger this year than last.

Foreign Exports

World 1985/86 cotton trade is projected at 19.6 million bales, down about 1 million (figure 4). Major exporters expecting gains are China, the Soviet Union and Pakistan. Chinese exports are forecast at a record 1.5 million bales. China is striving to develop its cotton export system. The Raw

Products Import and Export Corporation was created in January as a spinoff from Chinatex to handle the exports of cotton and wool. In addition, China is importing baling machinery which meets international specifications and is building export bases in major producing regions. These bases will allow consolidation and further development of cotton exports.

The Soviet Union, which has not been an aggressive seller in recent seasons, is now more competitive in international markets. Large carry-over stocks plus a good 1985/86 crop are expected to boost Pakistani exports this season.

Foreign Stocks

Despite a 2-million-bale increase in China's mill use plus exports, ending stocks in that country are forecast to rise 5 million bales to 25.2 million in 1985/86. Stocks are rising in China because production is expected to reach 24 million bales, 4.5 million more than the Government's procurement target. Stocks in other countries are expected to fall about 700,000 bales.

U.S. Cotton Exports

Gloom Pervades Outlook

International cotton prices declined steadily during the past 18 months. The "A" index dropped 1700 points from a January 1985 level of 71.1 cents per pound to an October level of 49.01 cents per pound. The mid-November level of 48 cents indicates an even further decline. U.S. Memphis Territory and California/Arizona growths at 69.25 cents and 69 cents per pound are currently not competitive.

The ratio of the "A" index over U.S. prices in Northern Europe usually averages about 0.98, and U.S. cotton exports normally equal about 10 percent of foreign mill use (figure 5). However, foreign cotton prices are now so much lower, that U.S. exports for 1985/86 are forecast to drop to 3.5 million bales, from 6.2 million last season.

The forecast is buttressed by the pace of shipments through October. U.S. exports in August were 207,000 bales; in September, 200,000 bales; and in October, exports were again about 200,000 bales. When divided by the seasonal factors of .700, .677, and .569, and multiplied by 12, the monthly data imply seasonally adjusted annual rates of 3.5 million bales, 3.5 million bales, and 4.2 million bales, respectively. While declines in exports at seasonally adjusted rates are obviously possible, it appears from the first-quarter data that U.S. exports have bottomed out for the 1985/86 season at about 3.5 million bales.

One reason that U.S. exports will not fall to zero this season is that about $350 million in GSM-102 credit guarantees have been announced for cotton shipments to Yugoslavia, Ecuador, Hungary, Jamaica, and Korea for fiscal 1986. These shipments could account for 1.1 million bales of U.S. exports.

Foreign Prices Dropping Also

Prices received by foreign countries for cotton are declining (table 3). Responses of foreign producers to the lower prices will be key factors in determining whether U.S. exports in 1986/87 and beyond are able to rebound from the loss of market share this season.

Table 3--Index of prices received by Outlook "A" Index cotton producers

Year	U.S. farm price	Outlook "A" Index	Weighted dollar exchange rate 2/	Index of prices received in foreign currency
		Cents/lb.		
1980	74.7	97.97	48.3	47.3
1981	54.3	83.53	66.4	55.5
1982	59.4	72.57	77.3	56.1
1983	66.4	84.08	112.0	94.2
1984	58.7	80.91	174.1	140.9
1985	1/ 56.6	1/ 49.01	1/ 221.8	108.7

1/ October, 1985. 2/ Foreign currency units per U.S. dollar for countries included in the "A" index calculations, weighted by exports from each "A" index country.

The 40-percent decline in the "A" index between the 1984 average and October 1985 results from large surpluses in China and the United States, combined with a growing recognition that changes in U.S. farm policies could lead to even lower prices during 1986/87.

This recognition may be causing many countries to aggressively attempt to reduce their stocks of cotton now--leading to stronger price competition in world markets than might otherwise occur.

Reactions to lower cotton prices will vary (table 4). The centrally planned economies, as well as Egypt, Sudan, Pakistan, and India, have in the past demonstrated almost no response to lower world prices. Further, the responses shown will probably be mitigated by declines in competing crop prices.

Table 4--Estimated percent change in harvested area caused by a 10-percent decline in cotton prices.

Country	Percent change
Australia	-3.5
Mexico	-4.0
Central America	-4.0
Brazil	-1.0
Other South America	-6.0
Turkey	-3.5
Egypt and Sudan	-0.5
Pakistan	-0.5
India	-0.5
USSR	-0.5
PRC	0

Source: Collins, Keith J., Robert B. Evans, and Robert D. Barry. "World Cotton Production and Use: Projections for 1985 and 1990."

USDA Foreign Agricultural Economics Report No. 154, June 1979.

Still, there are some countries, notably Australia, Turkey, and Western Hemisphere nations, which will probably react to lower cotton prices by planting less cotton. Reports from Mexico, Turkey, and Peru indicate that acreage may indeed decline in 1986.

However, it may take several years to work foreign cotton supplies lower. Because foreign beginning stocks in 1986/87 will rise to about 43 million bales, foreign production in 1986/87 will have to drop 7 percent to 63 million bales just to hold foreign supplies even.

Recent increases in foreign plantings seem to have peaked during the 1984/85 season; however, current levels remain high. China is adopting production control measures in an effort to balance supply and demand. These measures stress quality over productivity and are aimed at stabilizing Chinese production. Chinese stocks, however, are expected to remain large in the foreseeable future and China will remain an important factor in the cotton picture.

Soviet cotton area has been relatively stable in recent years and is expected to remain so. Soviet production is moderately better this season, but future production may remain in the 12-13 million bale range considering available crop area and irrigation supplies. African area, excluding Egypt and Sudan, has been and may continue to expand as these countries strive to obtain foreign exchange. Egypt and Sudan are not expected to increase cotton plantings at the expense of food crops. Cotton area in Australia and Mexico has contracted in response to current low prices. Considering these factors, world production may remain relatively stable.

Americans Using More Cotton

Years from now, the U.S. textile industry may look back on 1984/85 as the season when cotton finally turned the corner in its competition with manmade fibers. "Natural" blend pants and shirts of 60 percent cotton and 40 percent polyester are increasingly available at retail stores. Use of heavy weight, 100 percent denim is rising, and the cotton content of other apparel products, ranging from socks and underwear to womens' wear, is increasing (figure 6).

A shift in consumer preferences toward natural fibers, improved technology for using cotton, a fashion trend toward heavyweight denim, and a decline in the cotton/polyester price ratio, combined with a perception that cotton will remain relatively less expensive, underlie the rise in cotton's market share. The influence of trends in fashion and consumer preferences cannot be quantified, but cotton's share of domestic consumption began rising in 1980, and wool's market share began rising in 1975. 1/ Retailers indicate that shifts in consumer tastes are causing these changes.

However, cheaper cotton prices are probably also influencing market share. During 1976-80, the cotton/polyester price ratio averaged 1.29. The ratio fell to 1.01 in 1981, climbed to 1.14 in 1983, and may average 1.06 in 1985.

Largely as a result of cotton's increased market share, Americans will buy more cotton during 1985/86 than in 1984/85, and much of the increase will benefit U.S., rather than foreign, textile mills. Total U.S. fiber mill use is rising as retail sales continue to grow, while textile imports in 1985 are about equal to year-earlier levels.

Textile imports could resume their long-run average growth rate of about 7 percent per year during 1986, while retail sales may falter. However, cotton's improved market share will probably offset increased import competition, causing U.S. mill use to rise about 4 percent to 5.75 million bales during 1985/86.

Small Retail Sales Gains Likely

Deflated retail sales at general merchandise stores and apparel and accessory stores are still rising, although at much slower rates than a year ago (figure 7). The positive year-to-year changes in sales reflect continued strength in the consumer sector of the U.S. economy. However, the relatively small increases of recent months also reflect slow growth in real disposable personal income.

Real income may rise only about 2 percent in 1985, and an even smaller rise is possible in 1986. Furthermore, savings as a percent of disposable personal income dropped to about 4 percent during the first 3 quarters of 1985, compared with a 1980-84 average of 6 percent. Consumers will probably

1/ Domestic consumption equals mill use plus the raw fiber equivalent of textile imports minus textile exports.

try to rebuild their savings during 1985/86, especially if gains in personal income remain small. Consequently, retail sales of fiber products may rise less than 2 percent during the next year.

Textile Import Growth Likely

Textile imports during January-September 1985 were about equal to imports a year earlier, largely because retail inventories were growing too rapidly during 1984, when imports for 1985 were ordered (figure 8). Retail sales and inventories rose following the recession. But during 1984, as sales began to slow, retailers worked to lower their inventory/sales ratios.

While retailers did not actually reduce their inventories in 1985, the rate of growth was slowed sufficiently that sales were able to catch up, and inventory/sales ratios are now lower than in 1984. Because inventories are now in line with sales, a further slowing in growth is unlikely. Therefore, imports may rise in 1986, causing U.S. mill use of all fibers to decline.

Textile imports will probably rebound in 1986 because the fundamentals underlying the U.S. trade deficit in textiles remain. Wages in the U.S. textile industry are above most foreign wages. Prices for raw fiber paid by U.S. mills are as much as 40 percent above those paid by foreign mills. Despite the drop in the U.S. dollar since March 1985, the dollar continues to buy more of most foreign currencies than it did in the late 1970's (table 5).

One factor which could alter the outlook for textile imports and U.S. mill use would be enactment of protectionist trade legislation. The Textile and Apparel Trade Enforcement Act, if enacted, would likely limit U.S. textile imports in 1985 and 1986, although the impact of the law on U.S. textile trade depends greatly on what amendments are attached.

Table 5--Foreign currency units per U.S. dollar

	German mark	Japanese yen	British pound	Korean won
1970	3.66	360.0	0.42	310.6
1975	2.46	296.8	.45	484.0
1980	1.82	226.7	.43	607.4
1981	2.26	220.5	.50	681.0
1982	2.43	249.1	.57	731.1
1983	2.55	237.5	.66	775.8
1984	2.85	237.5	.75	806.0
October 1985	2.64	214.6	.70	892.1

1985/86 Production and Stocks

Record Yields

As of November 1, U.S. cotton production in 1985 was forecast at 13.9 million bales. Chances are two out of three that actual production will range between 13.3 and 14.4 million bales.

The above-average crop is occurring, despite a 30 percent, 3.6-million-acre acreage reduction program, because yields are forecast to average 642 pounds per acre--7 percent above the previous record.

Stocks-to-Use Ratio Worst Since 1965/66

With a harvest of 13.9 million bales, and forecast use of only 9.3 million, U.S. cotton stocks could more than double to nearly 9 million bales by the end of 1985/86. The resulting ratio of ending stocks to use (0.95) would be the worst since 1965/66. In the past, when the stocks-to-use ratio exceeded 0.5, farm prices were supported by the loan rate.

The weighted average of farm prices during January-September was about 54 cents a pound--more than 3 cents below the 1985 loan rate. If prices during October-December average less than 60 cents a pound, the maximum 1985-deficiency payment rate of 23.7 cents a pound will be paid to participating farmers. U.S. farm prices are usually lowest at the peak of harvest in October and November.

Farm Bill Debate Continues

A 1985 farm bill was passed by the House of Representatives in early October, but the full Senate had not yet acted on its version of the bill as of mid-November. Both the House and Senate versions of the bill contain similar cotton titles. The bill passed in the House by exactly a two-thirds majority.

The House version of the cotton title would keep the target price at 81 cents a pound in 1986/87, but the loan rate could be lowered. If U.S. prices are judged to be above world prices (as determined by a formula to be announced), the U.S. loan rate could drop as low as 44 cents a pound. In addition, USDA could offer to first buyers of cotton additional commodities from Commodity Credit Corporation (CCC) inventories. A buyer of cotton would receive the cotton, plus extra commodities from CCC stocks. This would serve to lower prices paid by textile mills, foreign and domestic, below prices received by farmers.

The Senate version of the bill would also keep the 1986/87 cotton target price at 81 cents a pound, but the minimum loan rate would be 55 cents. However, the Senate version would allow repayment of 1986-crop loans at rates equivalent to world prices adjusted to a U.S.-farm basis. Consequently, the Senate bill would put no floor under U.S. prices.

Implications for 1986/87

What if such a cotton title is enacted? If U.S. prices fall sufficiently to bring the ratio of the "A" index over U.S. prices in Northern Europe back to the long-term average of 0.98 (figure 5), U.S. exports might rebound during 1986/87 and 1987/88 to 9-10 percent of foreign mill use. That would imply a 3-million-bale rise in U.S. exports.

A drop in cotton prices would force adjustments in the manmade fiber industries, and the weighted average of all fiber prices could decline significantly, leading to an increase in U.S. fiber mill use. A drop in cotton prices relative to prices of polyester staple could lead to a further rise in cotton's share of fiber mill use. Cotton's mill-use share in 1984 was 24.8 percent of 10.8 billion pounds of fiber used. The change in cotton mill

use resulting from a drop in cotton prices could be about 200,000 to 400,000 bales. That means total disappearance might rebound to 12-13 million bales by 1987/88.

If the cotton target price remains at 81 cents in 1986/87, while loan rates and market prices fall, participation in the 1986 program will likely be exceptionally high. The 1985 cotton program attracted 83 percent of the base acreage. A payment limit may not apply to any deficiency payment resulting from a fall in farm prices below 55 cents a pound, and the method of calculating acreage bases could change, resulting in a drop in the cotton base. Consequently, participation in the 1986 program could approach 95 percent.

Conclusion

With beginning stocks of about 9 million bales in 1986/87, and 15-16 million acres of cotton base, acreage-reduction programs will still be necessary. However, improvement in cotton use would make a reduction in stocks during 1986/87 possible. Assuming average weather, a stocks-to-use ratio below 0.50 might occur within three seasons. If production of about 10 million bales is desired in 1986, a combination of acreage reduction and cash land diversion programs totaling 40-50 percent would be needed.

As in 1965, the factor most likely to contribute to a lowering of cotton stocks is a new cotton program. A further increase in cotton's share of U.S. mill use and a drop in the value of the dollar may help lower stocks. But competitive U.S. prices and acreage reduction programs strong enough to hold production below use will be key to correcting the current U.S. cotton surplus. Both the House and Senate versions of the 1985 Farm Bill contain cotton titles that would allow accomplishment of these objectives.

Fig.1--COTTON STOCKS/USE RATIOS

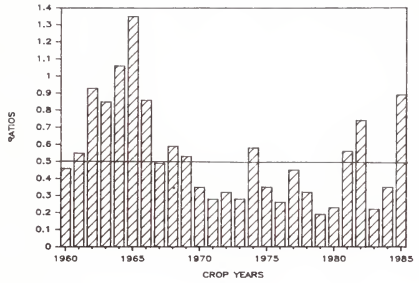


Fig.2--COTTON PRODUCTION

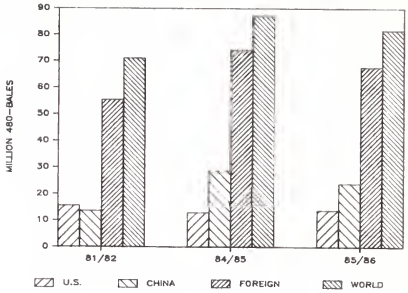


Fig.3--COTTON CONSUMPTION

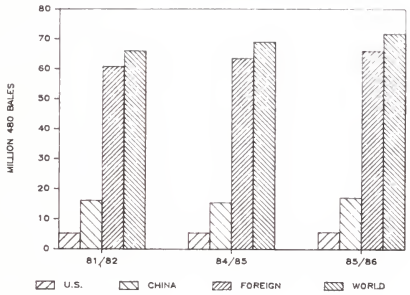


Fig.4--COTTON EXPORTS

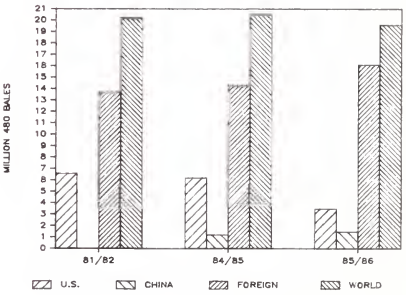


Fig.5--US EXPORTS' SHARE OF FOREIGN

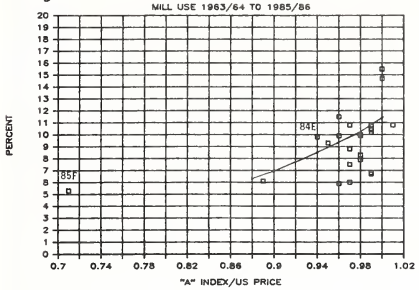


Fig.6--COTTON'S SHARE OF FIBER USE

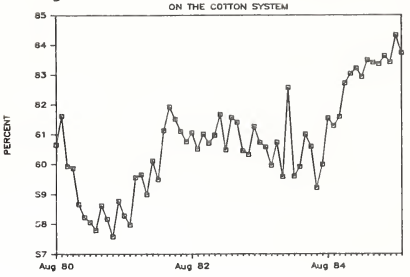


Fig.7--CHANGE FROM ONE YEAR EARLIER

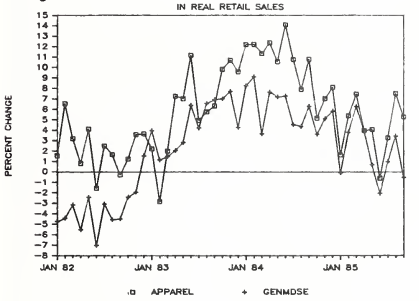
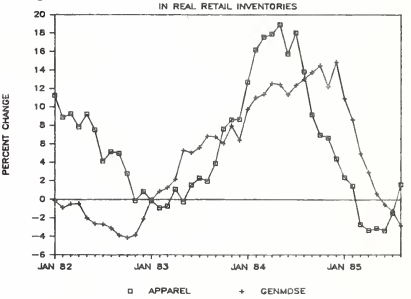


Fig.8--CHANGE FROM ONE YEAR EARLIER



U.S. COTTON - AT THE CROSSROADS
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U. S. COTTON - AT THE CROSSROADS

The cotton industry as we know it today in the United States is threatened by the current world surplus conditions and we are now at a key crossroad. I am talking about a key crossroad in farm policy to determine if we are headed into an era where our domestic markets account for nearly 3/4 of our total demand and thus would dictate a much reduced planted acreage base for cotton in the U.S. or are we going to impliment policy that will enable us to reenter world markets as a competitive source of cotton and allow our cotton producers to plant a more normal acreage base to cotton to satisfy demand.

The decline in cotton prices as measured by Cotton Outlook A index (a M 1 3/32 CIF North Europe quote) which started in the 84/85 season over 70¢ has continued into the 85/86 season with a price quote dropping in August 1985 to under 60¢ and in early October 1985 dropping below 50¢. The spread between US cotton growths and comparable world growths has widened to 8 - 20¢ depending upon the growth considered due to US prices sitting on the higher loan level of 1985 and thus effectively taking US out of the export markets. You have just heard a rather dark picture painted for the cotton supply/demand outlook by Terry and Gordon. I would like to take a closer look at the export number and show you how we at Dunavant have arrived at an even more dire forecast for US exports in 85/86 at 2.5 million bales. If we take the foreign world less PRC for 1985/86 we get 4.0 million bales net imports after allowing a 1/2 million bale stock drawdown. From this 4.0 million bales we must take out 1.5 million bales net exports for PRC, thus leaving US potential exports of 2.5 million. A comparison with last season exports by key areas or countries will show the drastic reductions of 50%, 75% and even 100% that are occurring due to our non-competitiveness.

Through continual updating with our people or agents in foreign markets we try to develop export potential for US cotton by growth types and this serves as a backup to our more general ways of estimating export potential. According to our numbers, pima cotton remains strong, SJV cotton holds a decent level but Arizona, Memphis territory and Texas type cottons are being killed by their inability to compete against other world growths. And this then is the key to our low export projection.

What is the outlook for 1986? I must go back to my opening remark "We are now at a key crossroad." The new Farm Program for 1986 and beyond or lack of program is the key.

Do we, because of political infighting and frustration opt for a 1 or 2 year extension of the current Farm Program or revert to permanent legislation. If so, then we look for total demand to be in the 6½ - 8 million bale range and our cotton producers in the U.S. would only need to plant 5½ - 7 million acres to satisfy the demand compared to 11.0 million planted in 1985/86.

Or, do we decide the United States must compete price-wise with the world. Do we signal the world that we are not going to abdicate our farming industry to these other nations? Do we signal the world that we are going to help our growers against unfair subsidization of exports by other nations? If so, then we look for total demand to be in the 12 - 15 million bale range and our cotton producers in the U.S. would be able to plant 10 - 12.5 million acres to satisfy the demand.

The U.S. Farm Program has functioned as an effective price support program for both the U.S. and most world producers over the past decade up until the past two years. In the U.S., producers have the option of placing their cotton under loan for the period of 10 months with an automatic extension for 8 months after which the cotton is forfeit to the Government. Even though such cotton can be removed at any time by the participants in the program, carrying charges must be paid -- in effect insulating this cotton from the world market unless the price advances to the level necessary to repay the loan plus the appropriate carry. Obviously, as the world and U.S. prices decline to near the U.S. loan rate, the amount of U.S. cotton under loan increases, limiting the downside potential in price movement. Then, as prices advance, this cotton is made available to the market limiting the upside price movement. In effect, then this loan program has functioned as a buffer stock for the world cotton economy until the past two years when, unfortunately, its effectiveness has broken down. This breakdown is due at least, in part, to the tremendous gains in production in China, P.R., as well as gains in production elsewhere. However, these production gains elsewhere, while partially explained by the need for exchange by developing countries and trend changes in productivity, may have also resulted from the price signal emanating as a result of the U.S. loan rate. World producers may have continued to increase the price paid to farmers as well as to increase the subsidization of inputs, etc. at a time when the opposite course of action might have been more appropriate.

The adjustment to world price levels in the new Farm Bill starting in 1986 is the most critical point that should prevail to alert all countries that the U.S. is no longer going to serve as the buffer for the world cotton economy and any further production decisions by countries had better be on price relationships to other competing crops and world supply/demand conditions for cotton.

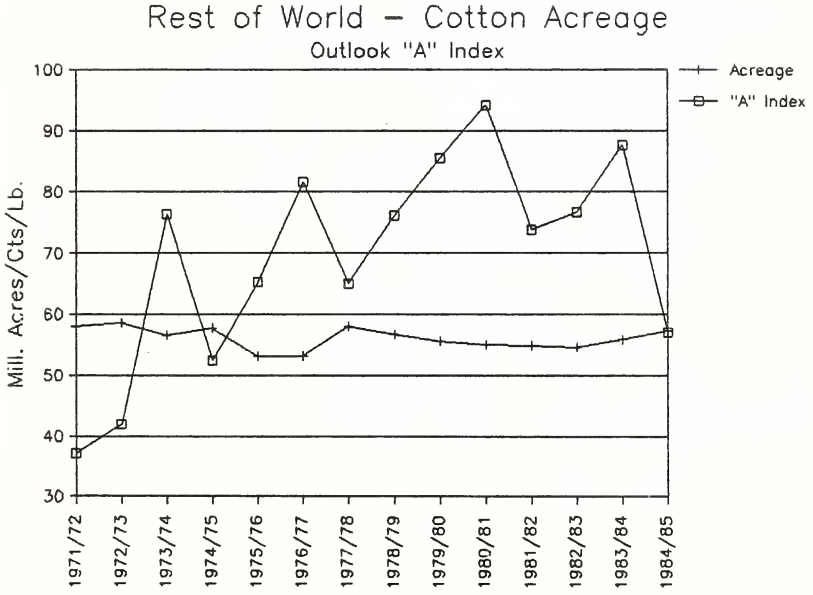
With sharply lower price levels facing foreign cotton producing countries we could expect the 1985 acreage level of 56.7 million acres for foreign world less PRC to fall back into the 53-55 million acre level. This should generate a production of 42.0 - 44 million bales.

If we look at consumption trends in the foreign world less PRC we find growth rates in the 1.5% to 3.2% range in recent years. With cotton prices now in a strong competitive relationship to other raw materials it should not be difficult to see these growth rates continue.

Again, with emphasis on U.S. export potential we see 1986 as a transition period as we adjust to world price levels. Although the gap between foreign world less PRC production and consumption shows 8.5 million bales, we must first work off excess stocks in foreign countries and take PRC net exports out of that number to develop the U.S. export potential of 4.5 million bales. Consumption numbers in the chart for foreign world less PRC have been set at the annual growth rate of 1.5% which could be conservative if cotton remains highly competitive relative to other raw materials. Also foreign world less PRC production was held at 42 million plus level in early years while our range indicated a potential as low as 40.0 million. Thus, under world price competitive levels for U.S. cotton we would anticipate the necessary adjustments in foreign acreage and hence production to take place along with strong consumption patterns to continue and allow U.S. export potential after 1986 to be very strong.

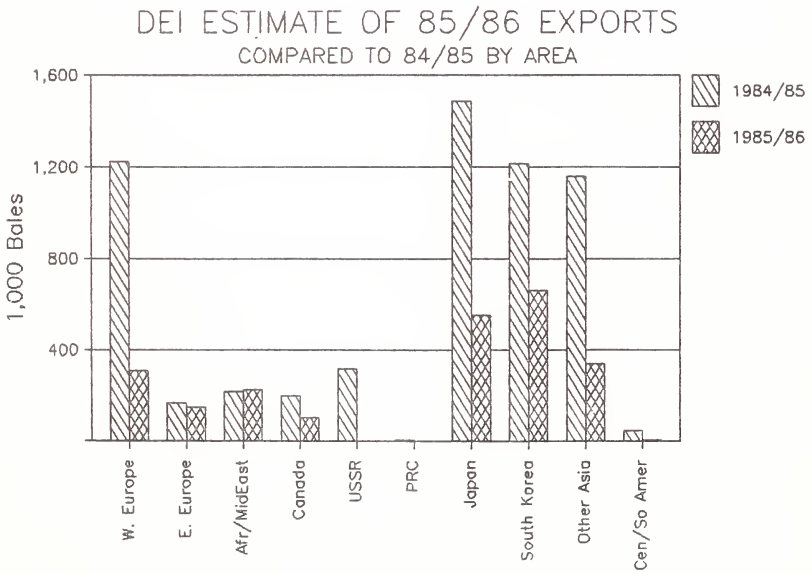
U.S. SUPPLY - DEMAND (000 BALES)

	1984/85		1985/86	
August 1, Stock	2,777		4,106	
Production	12,982		13,900	
Supply		15,759		18,006
Domestic Use	5,475		5,975	
Exports	6,211		2,500	
Total Use		11,686		8,475
Ending Stock		4,106		9,651



DEI ESTIMATE OF 85/86 EXPORTS COMPARED TO 84/85 BY AREA OR COUNTRY OF DESTINATION

Country of Destination	1984/85	1985/86	% Chg
	(000 Bales)		
West Europe	1,222	308	-75%
East Europe	169	150	-11%
Africa & Mid-East	219	225	3%
Canada	198	105	-47%
USSR	318	0	-100%
PRC	4	0	-100%
Japan	1,484	550	-63%
South Korea	1,216	660	-46%
Other Asia	1,159	340	-71%
South & Central America	47	5	-89%
	6,036	2,343	



FARM PROGRAM - 1986

A. High Loan - Resticted Acreage

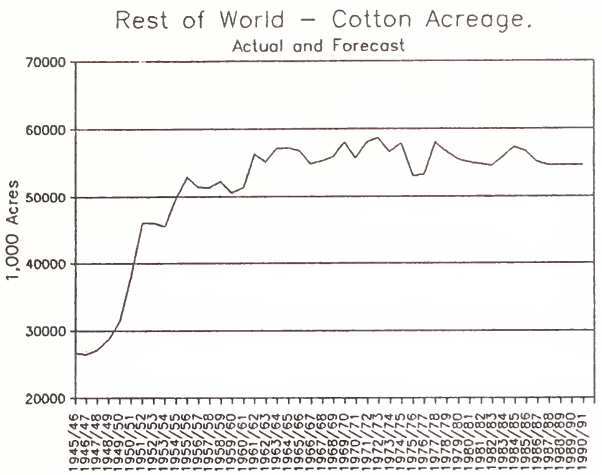
Demand Estimates

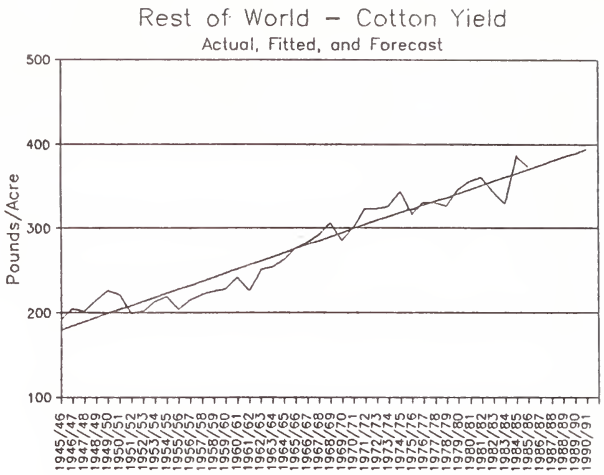
Domestic	4.5 - 5.0 Mil.	Acreage Base Needed
Exports	2.0 - 3.0 Mil.	For Demand
Total	6.5 - 8.0 Mil.	5.5 - 7.0 Mil.

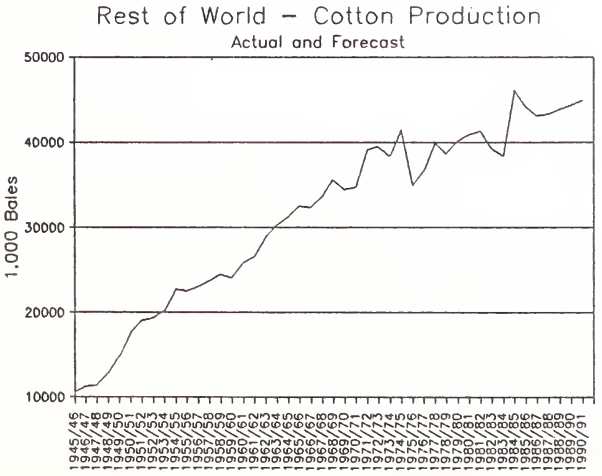
B. Support Levels Lowered To World Levels
With Income Supplement To Producers

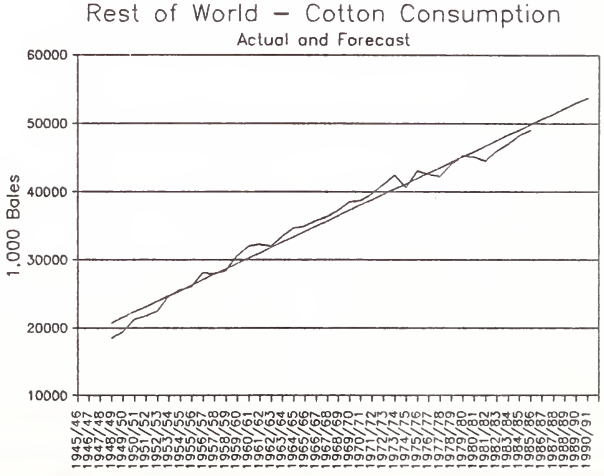
Demand Estimates

Domestic	6 - 7 Mil.	Acreage Base Needed
Exports	6 - 8 Mil.	For Demand
Total	12 - 15 Mil.	10 - 12.5 Mil.


Rest of World – Cotton Acreage.
Actual and Forecast
1,000 Acres
70000
60000
50000
40000
30000
20000


Rest of World – Cotton Yield
Actual, Fitted, and Forecast
Pounds/Acre
500
400
300
200
100


Rest of World – Cotton Production
Actual and Forecast
1,000 Bales
50000
40000
30000
20000
10000


Rest of World – Cotton Consumption
Actual and Forecast
1,000 Bales
60000
50000
40000
30000
20000
10000

DEI ESTIMATE OF 85/86 EXPORTS BY TYPE OF US GROWTH

	Total Exports	(1,000 Running Bales) AZ	SJV	MEM	TEX	PIMA
West Europe	308	22	219		25	42
East Europe	150	5	110	5		30
Africa & Mid-East	225	165	50	10		
Canada	105		80	10	15	
USSR						
PRC						
Japan	550	75	450		22	3
South Korea	660	222	325		110	3
Other Asia	340	40	45	12	238	5
South & Central America	5	1				4
	2,343	530	1,279	37	410	87

ESTIMATES OF U.S. COTTON EXPORT POTENTIAL BASED ON FOREIGN PRODUCTION - CONSUMPTION DIFFERENCE

	'85	'86	'87	'88	'89
			(Million Bales)		
Production	44.2	43.1	42.5	43.0	43.5
Consumption a/	49.0	50.6	51.4	52.2	53.0
Difference	4.8	7.5	9.0	9.2	9.5
PRC (Net Exports)	1.5	2.0	2.2	2.4	2.5
Stock Adjustment	.5	1.0			
US Export Potential	2.8	4.5	6.8	6.8	7.0

a/ For 1986-89 assume growth rate based upon projected trend line growth of approx. 1.5%

Keith A. Klindworth and William G. Kindya
Office of Transportation

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Aggregate demand for transportation services by the agricultural sector has varied over the past decade with fluctuations in bulk grain exports. U.S. exports of farm products expanded rapidly during the 1970's and at times, during the later part of the decade, existing transportation capacity was inadequate to meet movement demand. The expanding export market of the 1970's resulted in a large investment in transportation capacity, both rail and barge, in the early 1980's. Combined with the declining exports of grain and grain products in recent years, this has meant that transportation capacity has generally been in oversupply relative to the movement demands of agriculture. This fact alone greatly influences the outlook for agricultural transportation in the near term.

Although only about one-third of the total movement of agricultural commodities off-farm are for export, the export portion is generally assumed to be the primary component of agricultural transportation demand. Most of the domestic uses of grain, for instance, generally occur near production areas while movements for export must be much longer in distance. For these reasons, exports have a greater effect on equipment utilization and transport demand than off-farm movements to domestic destinations. Domestic agricultural traffic is assumed relatively constant.

Although the volume of U.S. agricultural exports is expected to drop 12.8 percent during 1985/86, localized storage and handling problems could result from the largest corn harvest on record. Nationwide, however, the 1986 outlook for agricultural transportation is again one of excess capacity and inadequate export demand. No difficulties are anticipated in the ability of the nation's transportation system to meet the 1986 transportation requirements of agriculture, either for domestic or export uses.

Movements for Export

Although the U.S. exports a wide variety of agricultural products, some of which require specialized transport and handling, over 90 percent of the volume of U.S. agricultural exports are dry bulk commodities such as grain and grain products, oilseeds and dry oilseed products, and feeds. These commodities share similar physical characteristics and are handled in the same types of tranportation equipment.

Increasing attention is being given to the export of higher value, generally processed, agricultural products which contribute to the value of U.S. agricultural exports many times their percentage of actual export volume.

In 1984 for instance, while exports of high-value/value-added agricultural products accounted for only about 15.7% of the total volume of agricultural exports, these products represented over 37% of the value of agricultural exports. The U.S. is not participating in the growing world trade of these commodities and one of the disadvantages for U.S. exporters is the high transportation costs involved in shipping to major, high-value product markets overseas.[1] The transportation and handling considerations of high-value agricultural exports will be examined in a subsequent section in this paper.

Table 1 shows the export tonnage of dry bulk commodities, oilseed products, and cotton for a number of years including anticipated 1985/86 exports. In volume terms, 1985/86 U.S. agricultural exports are projected to decrease 12.8 percent from the 1984/85 level of 119.8 mmt. The decrease is almost exclusively due to decreases in wheat and coarse grains. Soybean exports are forecast to increase slightly.

Table 1 -- U.S. Agricultural Exports: Volume of Selected Commodities, Marketing Years 1982 - 1986*

Commodity	1981/82	1982/83	1983/84	1984/85	1985/86
	Million metric tons				
Wheat	48.3	41.1	38.9	38.8	28.6
Coarse Grains	58.6	54.0	55.7	56.0	49.6
Rice	2.7	2.2	2.3	2.0	1.9
Soybeans	25.3	24.6	20.2	16.3	18.4
Soybean Oil	.9	.9	.8	.8	.7
Soybean Meal	6.3	6.5	4.9	4.5	4.5
Cotton	1.4	1.1	1.5	1.4	.8
Total	143.5	130.4	124.3	119.8	104.5

* 1984/85 exports are estimated and 1985/86 exports are projected.

Source: U.S. Department of Agriculture, World Agricultural Supply and Demand Estimates, October 10, 1985 and previous issues.

Figure 1 illustrates the significant year-to-year variation in U.S. grain exports. In 1973 grain exports surged 50 percent over the previous year as a result of heavy wheat sales to the Soviet Union, but in 1974, grain exports declined 18 percent. In 1978, the volume of U.S. grain exports increased

[1]The U.S. share of world high-value agricultural trade stagnated at 9-10 percent during the 1970's as the U.S. share of low-value agricultural trade increased from a quarter to a half. See High-Value Agricultural Exports: U.S. Opportunities in the 1980's, Economic Research Service, U.S. Department of Agriculture, Foreign Agricultural Economic Report No. 188.

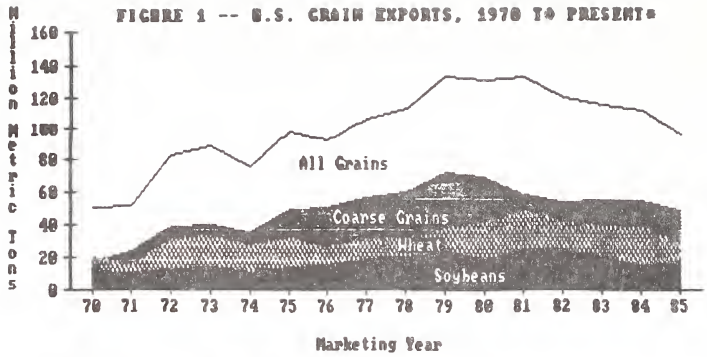


FIGURE 1 -- U.S. GRAIN EXPORTS, 1970 TO PRESENT*

* Marketing year 1985/86 exports are projected.

sharply by 25%. The growth in exports slowed in subsequent years and has declined every year since marketing year 1981/82. At times, this variability has stressed the ability of the transportation system to meet existing movement demand. During the height of the exports and the extreme railcar shortages of 1979, export sales were lost, late delivery penalties were incurred, carrying costs increased and some shippers had to use higher cost trucking to move grain stranded by car shortages.

Dry bulk commodities such as grain and grain products share similar transportation characteristics and generally compete for the same type of transportation equipment. However, specialization of production, availability of modal alternatives and accessibility of alternative export points differ greatly by region across the United States and result in differences in the type of tranportation used among regions. The major corn and soybean production areas in the United States are located in close proximity to the Mississippi River system and barge is the primary mode for the export movement of these commodities. In contrast, other areas of the country do not have ready access to barge transportation. Wheat grown in the South Central Great Plains is shipped primarily by rail to the Texas Gulf while wheat in the Northern Great Plains is shipped by rail to the Pacific Northwest and the Great Lakes, although trucks are also used for direct shipment to barge transloading points and port areas. In some areas in close proximity to port locations, trucks are the primary mode for export movements.

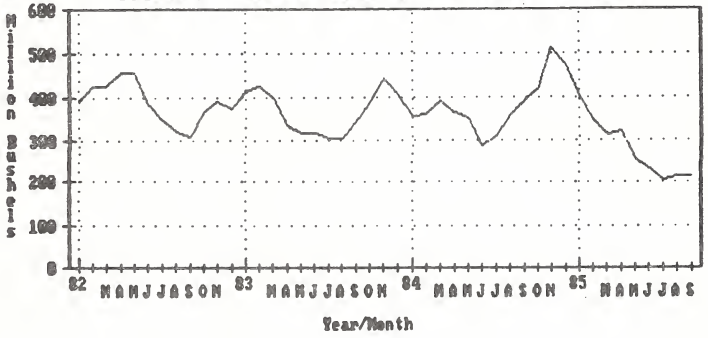
Pressures on specific types of transportation equipment can also result from a change in export destinations and the commodity mix of export sales even though the total volume of U.S. grain exports remains constant. For instance, Asian markets have been the primary export market for U.S wheat with an average of 47% of U.S. wheat exports in the three year period, 1981 - 1983. Most of the wheat moving to these destinations was shipped to Pacific ports by rail, or to a lesser extent, truck-barge on the Snake/Columbia River system. In contrast, most of U.S. soybean exports have been to European markets and almost all of these soybeans (85%) moving to Europe were shipped from U.S. Gulf ports and delivered to those ports by inland barge. Primary markets

for U.S. corn have been Asian countries and the European continent. Corn moving to the European continent has been exported primarily from U.S. Gulf ports although U.S. corn is also shipped to this market through Atlantic ports. Almost three-fourths of U.S. corn exports during the years of comparison were moved through Gulf ports.

Thus, change in the commodity mix of export sales or in the location of foreign demand can influence modal demand in addition to changes in the total volume of export shipments.

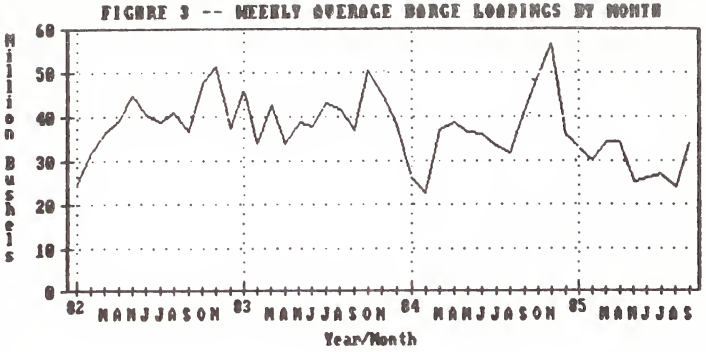
Grain export movements in 1984/85 were marked by an instability not seen in many years. Monthly export shipments, indicated below in Figure 2, exceeded 514 million bushels in November, 1984, larger than any single monthly export volume since January, 1978 and one of the largest on record. Monthly totals of both corn and wheat exports were at a seven-year high during this period with wheat exports approaching 218 million bushels in September and corn exports almost 257 million bushels in November, 1984. The shipment of 74.5 million bushels of Hard Red Winter wheat to the USSR from the U.S. gulf was a major reason for the record September wheat exports while gulf shipments of corn destined to the USSR and Japan amounted to over 101 million bushels of the record November corn exports.

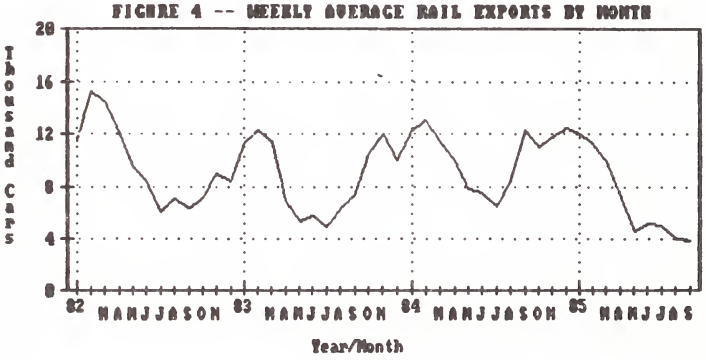
FIGURE 2 -- GRAIN INSPECTED FOR EXPORT BY MONTH



On the other hand, export volumes dropped precipitously during the first six months of 1985 reaching a seven-year low in July, 1985 of just over 200 million bushels. Monthly inspections of wheat for export were at a seven-year low in March of 1985 of just 58 million bushels and corn inspections for September of 1985 were only 76 million bushels, also a seven-year low. The decline in wheat exports in the first half of 1985 is attributed to strong competition from Southern hemisphere exporters, continuing pressure from the high dollar and a halt in Chinese purchasing.

A comparision of barge loadings during this period of record high and low grain exports (Figure 3) with rail-delivered grain exports during this period (Figure 4) suggests that most of the increase in exports during the fall of 1984 was accomplished by barge shipping, while the decrease in exports during





the spring of 1985 affected rail more than barge shipping. Barge shipping was at a seven-year high during the record grain export month of November, 1984 while rail-delivered grain exports were at a normal level for the season. On the other hand, rail exports declined to a seven year low in the summer of 1985 which coincided with the record lows in grain exports. Barge shipping also declined during this period, but not to the extent of rail exports.

Although exports of most grains are expected to decline further in 1985/86, the magnitude of the decreases differs by commodity. Wheat exports are expected to decline 26% and coarse grain exports 11% during the 1985/86 year. Soybean exports, on the other hand, are forecast to increase 13% during the year. Aggregate export volume at 104.5 mmt for 1985/86 is 12.7% below last year's amount. The decline in aggregate export volume during the next year is expected to affect rail carloadings more than barge loadings. Export movements of wheat, which are expected to decline significantly, are a major contributor to rail grain traffic, especially export traffic, and the decrease in exports of the barge-shipped commodities (corn and soybeans) is expected to be much less severe (-6%). Overall, the export movements of U.S. agriculture during the upcoming year will be easily accommodated.

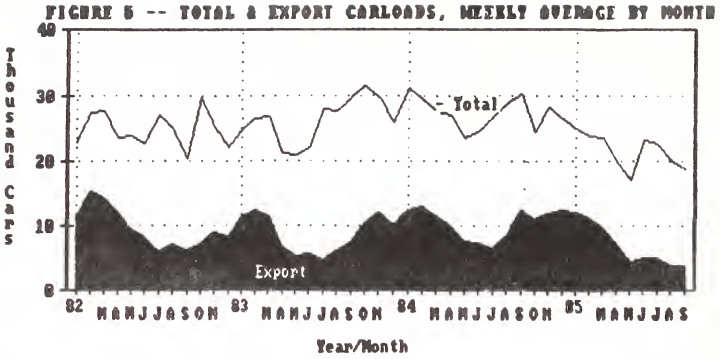
Movements for Domestic Use

Grain

The bulk of agricultural commodities that are transported off-farm move not to export locations but to domestic destinations for feeding, processing or other domestic uses. Although about twice the annual volume of exports is shipped off-farm to domestic destinations, the impact of these movements on transportation demand is not nearly as large as their share of off-farm movements in volume terms would indicate. The reason is that most of these movements are relatively short distance to intrastate locations. Measured on a ton-mile basis, the magnitude of these movements and their contribution to total agricultural transport demand is not nearly as significant as their share of tonnage shipped off-farm. For this reason, domestic agricultural traffic is assumed constant and small, short-term variations which do occur can easily be handled by the operational flexibility and supply elasticity of motor carriers.

One of the largest categories of domestic movements is feed grains, grain mill products, and oilseed cake and meal for livestock feed at locations other than on the farms where the grains and oilseeds are grown. Movements of grain for cattle, hogs and turkey feeding tend to be short since major feeding states of these livestock are also states of heavy grain and oilseed production. Feed movements to satisfy the requirements of broiler production, however, are much longer since broiler feeding is concentrated in Southeastern states and a few other states outside of areas with heavy grain production. Soybean movements off-farm to processing locations are generally short distance since processing facilities are located near production areas.

Although domestic agricultural traffic is considered constant, in 1983 a combination of the severe drought and the large-scale acreage reductions resulted in a significant increase in domestic movements to grain deficit areas of the country. As would be expected with rail being the primary mode for interstate domestic movements, an increased feed demand was translated into increased rail carloadings during the second half of 1983. A comparison of estimated 1985 with 1984 domestic rail movements of grain, defined as total rail carloadings less deliveries to ocean export locations, indicates that domestic rail traffic has declined since then, from an average of 20.1 thousand cars per week in the last half of 1983 to an average of 13.7 thousand cars per week in the first 6 months of 1985 (See Figure 5).



Indications are that 1985/86 domestic movements of grain and grain products will not be significantly different from 1984/85. Feeding of coarse grains, which usually represents about 80% of the domestic use, is expected to increase 4.95 mmt above the 1984/85 level of 131.89 mmt. Wheat feeding is forecast to decline to 8.17 mmt in 1985/86 as compared to 11.4 mmt in 1984/85 as low cost supplies of more traditional feeds and feed ingredients are available for rations and wheat feeding becomes less of a necessity. Total domestic use of soybeans in 1985/86 is expected to be 31.34 mmt of which 28.99 mmt (92.5%) will be processed into oil and meal byproducts. Anticipated processing demand is 3.4% larger than last year but still well below levels of recent years.

Perishables

The movement of perishable agricultural products -- fluid milk, red meats, potatoes, fresh fruits and vegetables and poultry and eggs -- is fundamentally different from the transport of bulk grain and grain products. Perishable agricultural commodities and products are typically of high value, require specialized transport equipment with environmental control features, and are extremely service sensitive. Yet, the volume of these types of commodities moving domestically in the United States is not small; domestic movements of meats, poultry and eggs, milk and milk products, fruits and vegetables and sugar were estimated at 172 mmt in 1982 compared to an estimated total domestic movement of bulk grain and grain products of 187.3 mmt.

The domestic movement of almost all perishable commodities is dominated by truck transportation due to the operational flexibility, the service reliability, and the ability of shippers to transport smaller lot sizes. In certain markets, railroads have made inroads with innovative TOFC programs, but overall, rail share of perishable agricultural commodity movements is small and the water carriage share is almost non-existent. Air transport is used for the shipment of high-value commodities, such as strawberries and flowers, where the products are extremely perishable and transit times and delivery condition are of paramount importance.

Table 2 -- Fresh Fruit and Vegetable Shipments, Percentages By Mode, 1980-1985

Mode	1980	1981	1982	1983	1984	1985
		-------- percent of total ---------				
Rail	8.6	8.4	8.0	8.9	7.4	4.4
Truck	90.0	88.8	87.9	85.5	86.7	88.4
TOFC/COFC	1.4	2.8	4.1	5.6	5.9	7.2

Source: U.S. Department of Agriculture, Fresh Fruit and Vegetable Shipments, FVUS-7, Various Issues. 1985 data are based on cumulative shipments through November 2, 1985.

Most of the domestic movements of perishable agricultural commodities, measured on the basis of tonnage shipped, are either milk or milk products (70.8 mmt, 1982) or fresh fruits and vegetables (65.4 mmt, 1982). Bulk milk is hauled relatively short distances to markets by specialized truck transportation. Fresh fruit and vegetable movements are also shipped predominantly by truck even though these movements are much longer distance, often cross-country from California, Texas, Florida and the Pacific Northwest to major demand centers in the Midwest and Northeast. Table 2 shows the extent to which each mode participates in the movements of fresh fruit and vegetables.

Transportation Rates

Railroad freight rates on farm and food products have remained constant or declined over the past year according to rail price indices compiled by the Bureau of Labor Statistics. As is indicated in Table 3, rail freight

Table 3 -- Rail Freight Indices on All Rail Traffic, Farm Products, Grain and Food Products, 1982 to Present

Period	All Products	Farm Products	Grain	Food Products
	---------- (December, 1984 = 100) ----------			
1982	93.7	92.4	93.4	93.7
1983	95.0	94.0	94.0	94.8
1984	99.3	98.7	98.6	99.1
1985 - October	99.8	97.6	96.3	100.1

Source: Bureau of Labor Statistics

rates on farm products have increased 5.6% since 1982, rail freight rates on grain have increased 3.1%, and rail freight rates on food products have increased 6.8% since that time. These indices have been updated to reflect rail price changes from December, 1984 and a more current traffic base.

Recent barge rates for grain movements to New Orleans have been well below last years depressed levels, as indicated in Table 4 which compares spot market barge rates from a number of origin points to New Orleans for May-August, 1984 with May-August, 1985.

Table 4 -- Average Barge Rates For Grain from Selected Origins to New Orleans, May - August, 1984 and May - August 1985

Origin	Average Rate May - August 1984	Average Rate May - August 1985	Change
	-- percent of tariff --		(%)
Twin Cities	130.9	103.9	-21
St. Louis	100.4	85.4	-15
Memphis	113.0	96.1	-15
Illinois	112.8	97.0	-16
Ohio	103.3	87.8	-15

Source: St. Louis Merchant's Exchange, St. Louis, Missouri

As Table 4 indicates, barge rates on grain shipped on the Mississippi River system for the summer of 1985 ranged from 15 to 21 percent lower than the previous year.

With the extent of overcapacity on the inland waterway sytem, there is little likelihood that the overall barge rate level will change appreciably during 1985/86. Based on one estimate that the barge fleet of the Mississippi has a nominal carrying capacity of 4.5 billion bushels and that the fleet actually only carried 2.1 billion bushels in 1984, existing barge capacity was utilized at a rate of only 47% for the year.[2]

[2]Brent Dibner, Massachusetts consultant, quoted in October 31, 1985 Journal of Commerce.

Transportation Needs of High-Value Exports

Trends that are affecting agricultural trade are also influencing the type of transportation services required by agriculture. In the past, the transportation needs of U.S. agriculture have been viewed primarily in terms of the capacity needed to handle expanding U.S. exports of bulk low-value products. But, over the last decade, world agricultural trade has steadily been shifting towards trade in high-value farm products as opposed to bulk low-value initial products, such as grain.[3] In 1980, for instance, world trade in value terms of high-value farm products surpassed trade in the bulk low-value initial products, despite the large volume increases in U.S grain exports during the 1970's. This shift suggests that a total orientation of U.S. transportation to capacity considerations may be misplaced when world agricultural trade is increasingly demanding more specialized transport services for the movement of small-sized, higher-value exports.

U.S. participation in the growing world trade of high-value agricultural products remained unchanged over the last decade during which the U.S. share of low-value agricultural trade increased significantly. In the 1970's the U.S. share of world low-value product trade increased from a quarter to a half, but the U.S. share of world high-value product trade remained constant at 9-10%. The fact that the U.S. export gains over the past decade have been in low-value products explains why the U.S. share of world trade in volume terms could double from 20 percent in 1970 to 39 percent in 1980 while U.S. share of world trade in value terms remained almost unchanged at 15-18%.

Although the composition of world agricultural trade has shifted towards the higher value processed products, Table 5 indicates that for calendar year 1984, almost 63% of the value of U.S. agricultural exports were low-value initial products. More importantly, Table 5 also illustrates the relative contribution of high-value and low-value products to the total value of U.S. agricultural exports in relation to their volume share. Although high-value commodities accounted for only 16% of the total volume of U.S. exports, they benefit the U.S. economy to a greater extent, accounting for 37% of the value of U.S. exports.

Although the position of the U.S. in high-value product markets is undoubtedly determined to the largest extent by foreign trade policies, high shipping costs to high-value product markets overseas have been a major disadvantage for U.S. exporters of several products. For instance, the U.S. has a comparative advantage in the production of fresh fruits and vegetables,

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[3]High-value products have been divided into three groups: (1) semi-processed products which include fresh, chilled and frozen meat, wheat flour, sugar, coffee, cocoa, tea, feeds, oilseed cake and meal, and oils and fats; (2) highly processed products which include prepared meats, milk, butter, cheese, cereal preparations, dried fruit, preserved/prepared vegetables, sugar preparations, chocolate, spices, food preparations, beverages and cigarettes, and (3) high-value unprocessed products which include eggs, fresh fruits, fresh meats, and fresh vegetables. All other products are classified low-value products.

See: High-Value Agricultural Exports, U.S. Opportunities in the 1980's, Economic Research Service, U.S. Department of Agriculture, page 2.

Table 5 -- Value and Volume of U.S. Agricultural Exports, Low-Value Initial Products and High-Value/Added Products, Calendar Year 1984

Commodity Groups	Value	Volume
	($1,000)	(mt.)
Low-Value/Initial Products		
Grain and Feed	14,945,532	100,990,696
Oilseed	6,012,955	21,146,593
Dairy, Livestock and Poultry	89,454	4,000
Horticultural	0	0
Cotton, Tobacco and Seed	2,731,032	1,569,015
Sugar & Tropical	24,840	32,648
Subtotal	23,803,813	123,742,952
High-Value/Value Added Products		
Grain and Feed	2,388,400	10,216,854
Oilseed	2,560,447	6,511,626
Dairy, Livestock and Poultry	4,190,511	2,643,552
Horticultural	2,606,839	2,810,387
Cotton, Tobacco & Seed	1,532,868	397,667
Sugar and Tropical	748,830	434,515
Subtotal	14,027,894	23,014,601
All Products	37,831,706	146,757,553

Source: U.S. Bureau of Census, compiled by Trade and Economic Information Division, International Agricultural Statistics, Foreign Agricultural Service, USDA

but that advantage is lost through high shipping costs which has meant that U.S. exports of these products have been traditionally to nearby markets such as Canada. For U.S. exporters of many perishable products, as the distance of the export market increases, the market becomes less and less viable. One of the factors critical to increasing U.S. exports of animal products, in addition to improved marketing and fewer health and tariff barriers, has been identified as lower transportation costs.[4]

A solution to the transportation problems of high-value exporters will only be forthcoming after the visibility of this issue is raised and transportation companies begin to appreciate the economic importance of high-value agricultural exports and the specialized type of transportation services which they require. During the 1986 Outlook Conference, the Office of Transportation is sponsoring a session on the transportation problems of

[4]Foreign Agriculture, January, 1984, Special Section on Value-Added Exports, U.S. Department of Agriculture, Foreign Agriculture Service, page 17.

high-value exports with notable representatives from the beef and poultry industries addressing the topic from their perspective as actual high-value exporters. Ideally, attention to the specialized transportation requirements and problems of high-value exporters will not only reveal transport and logistical impediments which are the primary reasons for the lack of access to specific markets, but also point to possible transportation economies that give U.S. exporters advantages in certain markets.

Rural Roads and Bridges

Agriculture and related industries account for about one fifth of the total U.S. output of goods and services. An adequate rural transportation infrastructure is required to transport farm production to market and provide input supplies of fertilizer, farm machinery and other resources for farm production. The recognized problem of the nation's deteriorating rural road and bridge infrastructure continues to plague government officials at the state and local level that have the primary responsibility for rural roads.

The status of the rural transporation system is complicated by the limited financial resources available for maintenance and construction of rural roads and bridges, management capabilities and revenue generating sources. The impact of increased allowable truck weights, heavier farm machinery and increased traffic volume using the nation's rural roads and bridges, many designed to accommodate far lighter loads and less traffic volume, continue to add to the burden placed on the already strained system. The social and economic viability of the increasingly interdependent farming sector and rural communities depends heavily on the quality of rural transportation.

Basic transportation service is essential to achieve the development potential of rural areas since transportation facilities are a major consideration to industry when considering new plant locations or existing plant expansion. Because off-farm income has become so critical to the farmers' economic survival and because agricultural production is so vital to the rest of the rural economy, continued economic and social cooperation between the farm sector and rural communities will become increasingly important. The transportation link provided by an adequate rural road and bridge network is needed to help ensure rural economic vitality.

Conclusion

Traditionally, the transportation concerns of agriculture have been related to the need for a sufficient supply of transport equipment to meet an expanding export demand. But with the decline in export volumes of bulk agricultural products over the past few years, this concern is no longer paramount with most agricultural shippers. Instead, the macroeconomic issue of the competitiveness of U.S. agricultural products in world markets and the factors which determine that competitiveness is now of critical concern to not only agricultural shippers but to the entire agricultural community. Accordingly, the chief transportation issue for agriculture has shifted from one of capacity to the role of transportation and distribution factors in determining the competitiveness of all U.S. agricultural products, especially high value products, in world markets.

HIGH-VALUE AND VALUE-ADDED EXPORTS:
A CHALLENGE TO TRANSPORTATION INTERESTS
Daniel E. Shaughnessy, President, TCR Services, Inc.

Annual Agricultural Outlook Conference
Session #20, Washington, D.C.

For release: December 5, 1985

High-Value and Value-Added Exports
A Challenge To Transportation Interests

The export of value-added and high-value agricultural products is an important part of our farm and national economy. In recent years, studies by the Department of Agriculture and other organizations have demonstrated the immense effect that exports of these processed and higher value products have had on employment, personal income, generation of tax revenues, and our economy in general. At a time when the total value of agriculture exports is substantially reduced from previous years, value-added and high-value exports take on even greater significance.

Marketing Value-Added Products - Transportation Considerations

However, increasing the level of exports in these product areas is not easy. World marketing conditions vary greatly; few markets are continually consistent in their size and duration; many value-added and high-value products are subject to subsidized foreign competition; and last but not least, transportation factors relating to such exports are extremely critical. In fact, the transportation of such products, which often makes the difference in a successful exporting effort, presents both problems and challenges. In a world situation which combines commodity marketing difficulties and high dollar values with a depressed freight market and a changing transportation scene, the effect of transport factors on the export of high-value and value-added commodities is considerable.

In this context, it is of utmost importance that commodity and transportation factors be considered together in the marketing and promotion process. All too often, market development efforts for such products tend to focus on the commodity itself, its characteristics, its quality, product specifications, commodity price and other commodity-specific attributes. Indeed, such marketing efforts often neglect to take into consideration the unique aspects of transport requirements or they simply assume that transportation will be available after the commodity sale is accomplished. Many such marketing efforts are frustrated when the exporter learns that cost and time considerations, which relate to transportation and which have not been taken into account, either negate any profit on the sale or are sufficient to cancel the entire transaction.

Both land and waterborne transportation of high-value and value-added products involves a number of specific considerations. For example, practically all of such cargoes involve packaged products either in liquid form, in bags or in specialty packaging. Further, while many such products are dry-packed in bags, or are packaged as canned goods, others require temperature controlled conditions or refrigerated transport. For ocean transportation, these factors translate into serious cost considerations, such as vessel suitability, product stowage capability, shelf life of the commodity in transit, resistance to moisture, domestic and foreign port handling facilities, hourly load and discharge rate capabilities and the experience of the stevedore or longshore handling organization.

In addition, such cargoes often do not, in themselves, make up full vessel loads; consequently, their destinations must be matched with those of other general cargo parcels in order to minimize transport time and expense. Refrigerated cargoes require either refrigerated vessels or reefer containers and the scheduling of such vessels is critical. This is an especially important factor in the export of frozen meats and poultry, where the cost of refrigeration and the timing of vessel availability is a major element in the total delivered price.

Intermodal Shipments

For existing and potential U.S. exporters of such products, intermodal transport is often necessary. Transport links from a packing or processing plant to truck or rail transport, on through to ocean transport, is becoming more and more commonplace in the export of value-added and high-value products.

Often, such movements are covered under a single Bill of Lading, which provides for lifting the product at the point of production and for final delivery at destination. Such intermodal Bills of Lading often limit rail or ocean carrier liability to the individual stages of the shipment. The result can be an especially confusing or formidable process for existing or potential exporters.

In addition, some ocean carriers limit their land-based intermodal movements to leased rolling stock or unit trains, which pick up container cargo at specific consolidation or "bridge" points in order to connect

with ocean transport at specific load ports. This service, can be efficient to those along the rail network and of advantage to those who are selling to countries serviced by the vessels in the system. However, it can also be a limitation in terms of market outreach and geographic range, since container movement is often port specific -- both in terms of U.S. load-ports and ultimate destinations.

Special Role of Government Exports

In recent years, the export of high-value and value-added commodities through government programs has taken on growing significance. Financing such exports has been a major advantage of the CCC loan guarantee program, known as GSM 102, and which accounts for approximately $5 billion worth of agricultural exports annually. The use of processed and value-added products in programs such as P.L. 480 has been extremely significant and is of growing importance. This program uses processed grain products, dairy products, edible oils, and high-value commodities. In addition, expanded authorities for exports under Section 416 of the Agriculture Act, the establishment of a new intermediate credit program, the use of export incentive programs, and continuing direct sales of CCC-held stocks, all contribute to a significant government market for value-added and high-value products.

Even in this growing government export market for high-value and value-added commodities, transportation considerations are essential. In some programs, the U.S. government may pay all freight expenses; in other

programs, the U.S. may be able to finance the cost of freight, and in other programs, the receiving country or importer must pay all or part of freight expenses. In still other programs, there is no allowance for U.S. government payment of freight. Added to these considerations, is the fact that many of these same programs may be subject to cargo preference, which requires 50% use of U.S. flag vessels, and which, in turn, may affect both cost and vessel availabilities.

There is also the possibility of transportation-related technical problems which can arise in government shipments of value-added and high-value products. For example, the export of some processed grain products requires fumigation at least 30 days prior to export. Yet, most exports of such products involve several small to medium parcels lifted at multiple load ports. Consequently, the first parcel, which may have been fumigated 25 days prior to loading, will be well past the 30 day limitation by the time the last parcel is lifted, thus running the risk of infesting the entire shipload. What are the appropriate responsibilities and liabilities in this situation?

Packaging and purchasing procedures also affect the transportation of these products. A recent change from 50 lb. to 50 kg. bags for some products and new bagging material for others, may be causing problems in stacking and storage, slinging aboard vessels and in rail transport. Added to this, is the fact that the government buys in pounds, but exports in kilograms for some of these products. All of these factors affect transport costs and services.

In other instances, the specifics of government commodity contracts may conflict with the specifics of government shipping contracts. If a commodity supplier has ten free days of port storage prior to vessel lifting and the vessel does not arrive for 15 days, and both entities are under separate contracts to the U.S. government, who pays the extra storage costs? Or, conversely, what if a vessel is delayed by the terms of a commodity delivery contract? Thus, transportation is also a critical element in government exports of value-added and high-value products and its impact can be significant, particularly in terms of cost and budget availabilities.

Solving Value-Added Transport Problems

Transportation problems associated with the export of high-value and value-added products, either through commercial exports or government programs, can be difficult, confusing and often, seemingly insurmountable. However, they are manageable, since the expertise does exist to analyze such factors in advance, take them into account when considering a potential export sale or commodity movement, and for planning market development activities.

For any potential exporter or supplier of high-value and value-added products, either for commercial or government markets, the following suggestions may be helpful:

First, consider commodity marketing requirements and transportation factors as one. While there are specific cost components associated with commodity processing and packaging, just as there are specific expense elements in transportation, such as rail freight, stevedoring costs, and ocean rates, these components must be reviewed simultaneously. Concentration simply on commodity marketing without considering freight and transportation as part of that process, will rarely lead to success.

Second, with transportation being the critical element that it is, commercial exporters of processed products should avail themselves of the services of knowledgeable and reliable agents, freight forwarders or brokers. In most instances, these are the individuals who know how to match freight parcels; who have dealt with intermodal movements, who know commodities and who are familiar with trade routes and freight rates; and who, in general, have the experience which a new or potential exporter of value-added and high-value products badly needs.

Third, it is important to remember that most transportation problems can be solved -- at least to the point of knowing in advance whether or not to proceed -- with proper information. The importance of advance knowledge of marketing information, including transportation information, cannot be understated. While some of this data can be obtained through the use of brokers, forwarders, and agents, there are other sources available. These include commercial trade leads, marketing services, and government programs.

One example of an excellent government trade lead and data source is the Agricultural Information Marketing Service (AIMS) of USDA's Foreign Agricultural Service. Information from these sources can help considerably in making transportation decisions.

Fourth, participants in government export programs of value-added and high-value products should do everything possible to assure full attention to the importance of transportation in these programs, both in terms of addressing technical problems, and in terms of assuring full or partial payment of transportation costs. Moving value-added products through government programs may well require more resources for transportation, either in terms of direct payments or financing, and this approach must be an integral part of the planning process for these programs.

Finally, it is important to be receptive to innovations in order to assure prompt, efficient, and cost effective transportation of these products. The relatively recent examples of improved containerization and break bulk movements, intermodal transport, and improved port and vessel capabilities, all indicate that continuing innovations in the transport of these products are both possible and likely. In particular, with packaging, in one form or another, being a common denominator in high-value and value-added exports, the opportunities for different cargo mixes, different vessels uses, intermodal links, and other innovations are considerable. In short, innovations should be sought and not awaited.

In conclusion, the changing world market situation for agricultural exports places value-added and high-value products in a unique position, reflecting both opportunities and problems. To the extent that problems are overcome and opportunities are realized, the effective utilization of transport facilities may well be the deciding factor.

TRANSPORTATION PROBLEMS OF HIGH VALUE EXPORTS
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Good morning. It is an honor to be here this morning as a panelist representing the meat industry.

Each year, the U.S. meat industry exports approximately 110,000 metric tons of beef and veal, 80,000 tons of beef variety meats and 50,000 metric tons of pork.

This represents about $470 million of beef and veal products and $229 million of variety meats. In addition, the United States exports $1.1 billion of hides annually.

The U.S. share of world meat markets is 5-6 percent, and we export only 1.3 percent of our total production.

Our industry is a very significant and viable participant in U.S. efforts to balance world trade. Control of transportation and distribution costs for exporting our products is critical. These costs, in some instances, can limit U.S. participation in foreign markets.

The largest volume of meat export products are produced in West Texas, Kansas, Colorado and Nebraska. The most logical export ports from these regions are West Coast ports for export to Japan and the Far East, and Gulf Coast ports for export to Europe, the United Kingdom, Mediterranean countries and others in that region. The problems and costs we will be discussing this morning will be based on export shipments through these ports.

Our products, of course, are perishable. Most meat products are exported as frozen products. However, there are limited movements of fresh product. Whether fresh or frozen, the product is time and temperature sensitive and does require specialized mechanically refrigerated containers.

Containerized export shipments may be shipped via pier-to-house rates or house-to-house rates. Ideally, to avoid excessive exposure of our product through port terminal transfers, all shipments should be made house to house. That means the empty container would be placed at the production site, loaded and delivered to the port ready for shipment.

Unfortunately, the supply of refrigerated containers is too limited to allow movement of the empty container to inland

production sites. Typically, our products are loaded onto domestic refrigerated containers (either truck or rail), transported to a container freight handling station adjacent to the export port terminal, unloaded from the domestic carrier's container and reloaded into the mechanically refrigerated ocean freight container. This loaded container is then moved to dockside for loading onto a vessel for shipment.

Our transportation cost can be separated into three categories.

1. Domestic transportation cost.
2. U.S. port terminal handling cost.
3. Ocean freight cost.

Domestic transportation costs

Our domestic transportation costs are competitive. We do not enjoy the benefit of low-cost, unit-train rates that are available to grain exporters, but we have negotiated very competitive truck and rail rates to transport our product to U.S. ports.

U.S. port terminal handling costs

Our real costs begin when the product arrives at the container freight station. I have prepared a few slides to help you visualize the physical handling of the product and to associate the costs involved.

These slides show the unloading of product from a rail car or truck, transfer of product on pallets to the ocean freight container, stowing product in the container and placing the container on the vessel for shipment.

Handling charges for these services vary considerably from port to port.

Let's begin with the Gulf port of New Orleans. If the product is delivered by truck, the truck driver is paid to "tailgate" the product or stack the product on pallets. The usual charge is $65 or $3.25/ton. There is an additional charge of $7.31/ton for transferring the product on pallets to the container.

We have made some progress in this area. We can now hire a fork lift driver, as shown in the slides, for $33 per hour. If everyone cooperates, transfer usually can be accomplished within two hours. This reduces our transfer cost to $3.30/ton. But, there also is a wharfage charge of $1.30/ton, bringing the total port cost to $7.85/ton or $8.65/metric ton for product delivered by truck to New Orleans.

If product is delivered to New Orleans by rail, the charge is $12.40/ton to unload the car and transfer the product to the container. Add the wharfage charge of $1.30/ton and our total cost is $13.70/ton or $15.21/metric ton. We are trying to negotiate a rail car unloading agreement that would allow us to pay the cost of stacking the product on pallets in the car and then hire a fork lift and driver as we do for the truck load. But so far, we haven't had much success.

The costs I have just described are set by ILA unions. Domestic shipments arriving by rail can be unloaded at other facilities at much less cost, but we are unable to use these types of facilities because of the ILA 50-mile rule. That rule requires that labor charges for any export or import container transfer within a 50-mile radius of the port must be at ILA labor rates.

Port costs at the Gulf port of Houston have made pier-to-house shipments almost prohibitively expensive. The cost at Houston to transfer a load of product from a truck to a container or to unload and transfer the product from a rail car to a container is $24.55/ton. In addition, there is a wharfage charge of $1.70/ton, bringing the total charge to $26.25/ton or $28.88/metric ton.

The average cost within our industry for loading a rail car with 130,000 pounds of meat product would be approximately $160. ILA labor at Houston charges $1,595 to unload that same car and transfer the product to a container. This is an extremely frustrating situation. Product can be transported by rail to Houston from western Kansas or West Texas at a cost of 2 cents per pound or less. But we are unable to keep our total costs down by taking advantage of these attractive rail rates because of the extremely high unloading charges at the port.

Some members of the industry have attempted to overcome this obstacle by attempting house-to-house movement and loading the empty container at production sites. But this has not been a very viable alternative because of a shortage of containers and the poor condition of a large percentage of the existing containers.

The containers run well when 220-volt electricity is available to drive the refrigeration unit. This is usually the case while they are plugged into a power source at the ports and while on the vessel. But we experience a high percentage of problems with propane-powered refrigerated compressors as well as tire problems when transporting containers to production sites by truck. Better maintenance and upgrading of the containers is going to be necessary in the near future.

Terminal costs at West Coast ports are established by prevailing Rate Associations or Conferences. Current costs are $14/metric ton for transfer of the product from truck or rail to the container and $5/metric ton to transfer the container dockside for loading on the vessel. Total port cost at West Coast ports: $19/metric ton.

I hope I have not confused you with this series of figures, but the costs just described are a critical part of our total export cost. A comparison of the costs to our industry and the costs to the grain-exporting industry may help bring it into perspective. A grain exporter pays appoximately $1/ton to have his product transferred from a rail car to an ocean vessel. The cost to a meat exporter for transferring our product would be $12.40/ton at New Orleans; $24.55/ton at Houston and $14/ton at West Coast ports.

Ocean Freight Cost

Our industry is in a better position today in terms of rates than we have been for quite some time. We are managing our transportation costs better. We are negotiating smarter, and we are benfiting from the trade imbalance between Japan and the United States.

Japan takes about 71 percent of the beef exports from the United States. Most vessels sail to Japan at 60 percent loaded capacity. That means the freight buyer to Japan and the Far East is in a buyer's position and, as a result, we are experiencing the lowest rates in history to Japan. This does not mean, however, that our freight cost is not still a critical factor, and we have to recognize that this is not a permanent situation.

It is gratifying, however, to find ourselves with better rates than our competitors from other meat-exporting countries. Our challenge is to work with the shipping industry to maintain this favorable position for U.S. exporters.

Most U.S. meat exports today are shipped via Conference or Rate Association carriers. Historically, ocean freight rates are charged by whatever the market will bear. If the ships are full, the rates go up. If available capacity exceeds available freight, the rates go down.

Conference and Rate Association carriers are allowed by law to meet and agree upon the rates they will charge with immunity from anti-trust laws. The shipping community is not allowed this advantage. Carriers can, however, publish a rate independent of the Conference or Rate Association tariff rates. This is a normal procedure in export movements to Japan but is not

available in the Gulf Coast or Atlantic Rate Conferences.

With the new Shipping Act of 1984, the use of service contracts betwen individual shippers and individual carriers has brought some rate stability for exports to the Far East. In a service contract, the shipper commits to a high volume of tonnage to obtain a preferred rate for an extended period of time, normally 12-18 months. This gives the shipper rate stability and is necessary for forward pricing to gain market share. The carrier has the advantge of committed tonnage and predicted revenues for this same period of time.

The major trade lanes for our meat exports are Europe, the United Kingdom, Japan and the Far East.

A couple of examples should help illustrate the total impact of transportation costs on our industry.

Pier-to-house rates for a packing house's product from the Gulf Coast ports to Europe and the United Kingdom are as follows:

Gulf Coast to Europe	$130/metric ton
Gulf Coast to U.K.	$150/metric ton

To this ocean freight rate, we have to add the terminal handling charges previously discussed. Let me use a shipment of kidneys to the United Kingdom as an example. The product is delivered to the port of New Orleans by rail. Terminal handling charges as previously discussed would be $15.21/metric ton, added to the ocean freight cost of $150/metric ton for a total cost of $165.21/metric ton. Value of the product delivered to the port is approximately $360/metric ton. Value of the load of kidneys delivered to the United Kingdom would be $525.21/metric ton. A freight cost of $165.21 represents a freight expenditure of 31 percent of the value of the delivered product.

In comparison, a shipment of corn from the port of New Orleans to Europe has a terminal handling cost of $1/ton and an ocean freight cost of $8/ton. Value of the shipment of corn delivered New Orleans is $110/metric ton. Value of the shipment of corn delivered Europe is $119/metric ton. Freight costs represent only 8 percent of the value of the delivered product. This disparity, of course, would be narrowed when shipping higher valued product such as tongues or ox tails.

To stay with the Gulf Coast for a few moments, there are other issues which are becoming critical. Our industry is experiencing a limited demand for chilled beef cuts to Europe and the United Kingdom. Ocean freight rates for chilled beef from Gulf Coast ports to Europe or the United Kingdom are presently $377/metric

ton, with a 16-metric-ton minimum, or $336/metric ton with an 18-metric-ton minimum.

Most buyers are requesting shipments of 9 metric tons or less. The rates noted are based on the use of 35- to 40-foot refrigerated containers. If this size container is used for a 9-metric-ton shipment then the freight rate would exceed $700/metric ton because of the minimum requirements. The solution would be to use 20-foot refrigerated containers. Unfortunately, this type of container is rarely available. Consequently, excessive freight charges prevent export of the product. The lack of 20-foot refrigerated containers is becoming a critical issue for our industry and one that must be addressed as quickly as possible.

Our industry also is trying to expand our market share into the Mediterranean. Products shipped to the Mediterranean go through the same Gulf ports we have been discussing. Shipments for the Mediterranean market are delivered to the same ports and handled by the same people as shipments to Europe or the United Kingdom. We do not, however, have the same ocean rates.

Current ocean freight to Spain is $160/metric ton, add to that the terminal handling rate of $15.21/metric ton for a total of $175.21/metric ton. Now remember this product is handled in the same way by the same people as product going to Europe or the United Kingdom. However, there is an additional charge of $14/metric ton for terminal handling of the container for shipments to Spain or other Mediterranean areas. Our total cost then becomes $189.21/metric ton.

As shippers, we need lower rates to gain market share in this area. Carriers tell us that they will consider lower rates if the volume increases. It is a Catch-22 situation. We cannot increase our market share without the lower rates. Also, we are faced once again with many orders averaging 9 metric tons or less and a severe shortage of 20-foot refrigerated containers.

I noted earlier that shipments from West Coast ports to Japan are moving at the lowest rates in recent history. For example, ocean freight rates for primal cuts of beef in January 1983 were $260/metric ton, plus the $19 terminal handling charge for a total cost of $279/metric ton. The lower valued variety meats were shipped with ocean freight cost in January 1983 of $227/metric ton, plus the $19/metric ton terminal handling charge, for a total of $246/metric ton.

The printed tariff rate today for these items is $120/metric ton for beef primal cuts, plus the $19 terminal handling charge, and $94/metric ton for lower valued variety meats, plus $19 terminal

handling. These reductions are due primarily to the carriers sailing at less than capacity to Japan. As export volumes increase, we can expect these rates to increase. Our challenge is to hold rates to a reasonable level so that we may continue strong exports to Japan and the Far East.

We still do not enjoy the advantage that exporters of other products have from the West Coast to the Far East at the present time. For example, an average shipment of meat products to Japan is 18 metric tons. Eighteen metric tons of beef primal cuts at $120/metric ton ocean freight cost results in a total charge of $2,160 for a 40-foot refrigerated container.

A 40-foot non-refrigerated container with a shipment of cotton has a total ocean freight charge of $450 per container. In other words, the cotton shipper is charged approximately 20 percent of the freight cost that our industry is forced to pay. While we acknowledge that carriers have a higher investment in refrigerated containers and that operating costs are higher to maintain refrigeration in transit, we do not agree that freight differentials of this magnitude are justified.

Let me cite another example. I recently had lunch with the marketing manager of one of the U.S.-flag carriers. I learned that this particular carrier had just signed a service contract with apple producers in the Northwest that will allow the apple producers to ship a 40-foot refrigerated container of apples to Japan for a total cost of $800. This is using the same refrigerated containers as those used by the meat industry with the same operating expense. But the cost to the meat industry is $2,160. In addition, there is a higher risk factor in refrigerating and transporting fresh apples than there is in refrigerating and transporting frozen meat.

Our industry is aggressively trying to expand our market share to other Far East countries. Ocean freight rates to Korea for our products are $160/metric ton; $180/metric ton to Taiwan, with a $2,800 minimum per 40-foot container; $198/metric ton to Hong Kong, and $260/metric ton to Singapore. Again, there is a critical need for 20-foot refrigerated containers to enable us to serve this market.

There are other issues and problems I would like to discuss briefly.

Until November 1984, our industry was faced with an add-on charge called a Currency Adjustment Factor for exports to Japan and the Far East. Most freight monies tend to be paid in U.S. currency. Exchanging currency into the currency of the countries where various lines are headquartered can result in a loss or a gain

for the lines. This Currency Adjustment Factor (CAF) was established to compensate the lines for losses incurred during the currency exchange.

From January 1983 to July 1984, the CAF increased from 2 to 8 percent. When currency exchange rates were beneficial to the lines, the profits were absorbed by the lines. The CAF has been eliminated through the writing of service contracts and the need for freight by carriers sailing to Japan. When the ships become full again, this unfair add-on cost will undoubtedly re-emerge.

Getting back to an issue we discussed earlier, there is a definite need for 20-foot refrigerated containers. Markets are missed and transportation costs are excessive for small-volume shippers because of the shortage of these containers.

In addition, the existing supply of 35- and 40-foot containers needs to be increased and upgraded. In the meantime, our industry is penalized in terms of rates by the need for these specialized containers. Carriers take the position that U.S. importers do not like to use this equipment because there is less cubic loading space in a refrigerated container than in a dry container. Consequently, carriers use this as a rationale for keeping our rates high.

I would encourage the carrier industry to follow the example of domestic freight carriers in enlarging the size of the refrigerated container, making it compatible for both dry and refrigerated freight. Additionally, if the supply of containers were increased, producers could have the containers available at production sites and avoid the excessive costs involved in transloading at U.S. ports.

We will continue to struggle with ocean freight costs because of the carriers' ability to meet and agree upon fixed rates. As shippers, we do not have this privilege. Consequently, we are in a position of negotiating rates between individual shippers and the combined forces of numerous carriers. It seems to me that what is good for the goose, is good for the gander. Why should carriers have anti-trust immunity while shippers do not?

In conclusion, I hope I have given each of you a clearer perspective of the effect of transportation costs on our industry. While I have outlined some of the problems facing U.S. meat exporters this morning, I have not meant to imply that relationships between carriers and shippers are adversarial.

In reality, we are partners in a common endeavor -- expanding U.S. meat exports. As shippers, we depend on the equipment and service provided by the carriers. It works both ways. Without

the shippers, the carriers have no market.

Continued extraction of monopolistic rents and unrealistic transfer charges will undercut U.S. meat export efforts. Our challenge is to develop reasonable rate structures that will adequately compensate carriers for their services while allowing U.S. meat shippers to remain competitive.

There is another issue that requires the attention of both shippers and carriers. We need to work together to achieve a more equitable balance between the cost of transferring and shipping perishable meat products and the cost of shipping dry freight commodities.

The meat industry is a necessary and viable participant in the U.S. export community. We are seeking to develop -- with the carriers -- a cost-effective transportation system that will give U.S. meat exporters the competitive edge needed to expand our share of the world meat market.

TRANSPORTATION PROBLEMS OF HIGH-VALUE EXPORTS

T. Y. Baker
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I appreciate all of you being here. As a trading company specializing in the export of frozen foods, especially poultry, we at E. Boyd and Associates, Inc. welcome the opportunity to discuss some of the problems we encounter in transporting our products.

My firm acts as the U.S. purchasing department for our foreign customers. For the poultry processor, we act as the export department, handling marketing, documentation, finance, and transportation. When I first broke into the business, transporting the product was the least of my concerns. Moving the product from point A to point B was fairly standard. Ocean freight rates were stable, and trucks followed a predictable, seasonable pattern of costs.

Later, however, ocean freight rate stability was shattered by rising fuel costs, long shoremen wage demands, overproduction of vessels, and more recently, deregulation. Inland freight costs are also more unstable now due, in part, to deregulation, but due also to some innovative thinking that has yielded alternative methods of moving the cargo.

Unfortunately, regulatory agencies have not kept pace with the innovations. For that matter, some of the principals themselves have been unable to keep pace. This inability to keep pace has led to the problems I want to address today.

#1 Under-utilization of container capability.

The typical 40 ft. refrigerated container is designed to safely store and transport 58000 lbs. gross weight of cargo. The chassis supporting the container, the cranes lifting the container, and the vessels themselves - all are designed to handle a container with up to 58000 lbs. gross weight of cargo.

Yet, as an exporter, I am frequently forced to ship only about 42000 lbs. gross weight because of over-the-road weight limitations imposed by federal and state governments. I must ship only about 70% of capacity, and under current freight rates to Japan or Hong Kong for example, this under-utilization forces me to offer prices to my customers 20% higher than they could be.

To my knowledge, only two state governments in the country have addressed this problem -- the states of Virginia and North Carolina. In these two states it is possible to obtain a license which allows an export shipment to transport up to 50000 lbs. gross weight over the road. However, the license is good for that state only, and I am unable to cross state lines. I am limited to using the local ports in the given state which may or may not have service to the destination country.

Most poultry containers shipped from the West Coast are not source loaded, yet under-utilization is a problem there also. If the containers are stuffed at an off-dock facility then state over-the-road restrictions apply which again limit us to about 42000 lbs. per container. For example, in Oakland we frequently ship cargo to a receiving facility near the port. That facility receives our trucks or railcars, loads the ocean going containers, and then drays the containers a short distance to the pier. Only one short stretch of road separates the receiving facility from the pier, yet according to state law, we cannot send a fully loaded container along that stretch. To comply with state over-the-road limitations we are forced to ship short, and, consequently, we often must quote higher prices to our customers.

I must add that the port of Oakland has entered into negotiations with the city of Oakland to assume responsibility and authority over the stretch of road from receiving station to pier. If the negotiations are successful then, of course, we shippers will be able to fully utilize the equipment and thereby offer more competitive prices to the foreign markets.

The port of Oakland is to be congratulated. They recognized a problem and have moved to solve it. Unfortunately, other West Coast ports have not, to date, followed suit.

The West Coast situation just described leads to problem #2 - that is, the inability of railroads to keep up with increased refrigerated railcar movements. About three years ago the marketing personnel in some railroads realized that they could more profitably reposition empty cars to the West Coast by filling them with export poultry. In the past the rail lines had simply routed empty cars back West to load produce destined for the eastern U.S. markets. However, the rail marketing personnel led the way in formulating new pricing and routing for frozen poultry movements which helped solve the rail lines' reposition problem and which also gave exporters another shipping alternative. Unfortunately, despite more than three years in this type of business, the operating systems of the rail lines handling these box cars remain cumbersome, steeped in grinding bureaucy, and slow - especially where more than one line is involved. It still takes

between 12 - 14 days for a shipment from a Southeastern production facility to reach the West Coast. Such a delay in shipment frequently conflicts with the demanding schedules of our export customers, but even more importantly, such lengthy transit times are costly. An exporter's cash flow is extended by as much as two weeks when utilizing rail. Thus, interest expense alone can eat up the low margins typical in the international trade of frozen foods.

However, change does not seem very likely at this point as old line rail managers and supervisors, particularly at the local levels, feel no sense of urgency when dealing with export cargo.

The two problems just mentioned - 1) under-utilization of containers and 2) the inability of rail lines to keep up with increased refrigerated railcar movements - are both inland freight problems. The third major area of concern, however, is instability of ocean freight rates. An in-house study of rates from West Coast to Japan over the past three years revealed that of the 12 quarters reviewed, only two - the last two quarters of '85 - showed the same rate. In 1984 the rate was down in each succeeding quarter.

Many of you might think that a steady cost reduction would be ideal for an exporter, but not so. To illustrate my point let me tell you about the recent plight of one of our good Japanese customers. He purchased about 300 tons of product when the exchange rate was about 240 yen to the dollar. Very shortly thereafter the dollar weakened by about 15% so effectively his competitors could purchase similar product at a 15% lower price. He, in the meantime, was stuck with high-priced inventory.

Now this particular example deals with foreign exchange, but I think you see how suddenly lower freight costs would have the same effect. In addition, when freight costs are in a downward spiral, our buyers will not buy ahead. They buy only for their short term needs as long term costs are unpredictable. We, therefore, cannot present our suppliers with any long term production plans. Sales must be handled on a spot sale, commodity type basis. Our goal, of course, is to have our customers view American poultry as a stable long range part of their purchasing plan, but with constantly changing freight rates this goal is well nigh impossible to meet.

Those are the problems I've come to present to you today - under-utilization of space, inability of railroads to keep up with increased railcar movements, and constantly changing freight rates. But please do not misunderstand my purpose. I am not saying things are impossible. We have learned to operate within the confines of the system, and we plan to export for years to come whether these problems are corrected or not. How much better, though, if the confines are removed from the system. How much better if I could ship 58000 lbs. per container; if I could ship by rail

with a seven day transit; if I could count on a stable freight rate. All other factors being equal, I think we could achieve a 10-20% increase in exports just by solving these problems.

And the leadership must come, I think, from the Federal government. Who else can effectively lobby the various state departments of transportation for higher over-the-road limits for export shipments? What other body can effectively moderate between two rail companies to achieve faster transit?

At the moment, the U.S. is, I think, the only net exporter of poultry capable of consistently supplying at a profit the tonnage required by our customers overseas. The foreign exchange has certainly moved in the favor of export. Circumstances are such that we could well increase our export tonnage - especially if the leadership is provided to solve some of the problems discussed here today.

REGIONAL IMPACTS OF FINANCIAL STRESS IN FARMING
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Agriculture and Community Linkages Section

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INTRODUCTION

There is much concern today about financial problems in U.S. agriculture. Many farmers are saddled with historically high debt-asset ratios. Some are so far in debt that costs of servicing this debt will be too high for them to continue to operate at recent levels. For regions, states, and communities that rely heavily on farming, financial stress of farmers translates to area-wide distress, at least in the shortrun. Our presentation first touches briefly on the national and international trends which are major contributors to the current farm crisis. Then, it identifies and discusses various regional and community factors which affect a region's or community's vulnerability to the current crisis in agriculture.

CURRENT FARM FINANCIAL SITUATION

The current financial distress among farmers, farm lenders and farm-based communities and regions is rooted in excesses induced by the inflationary conditions of the 1970's and exaggerated expectations of worldwide demand for farm products. These excesses have made it extremely difficult or impossible for many farmers to adjust to the radically different economic conditions of the 1980's. Throughout the 1970's, there was a rapid expansion of U.S. agricultural capacity as farmers took advantage of accelerating inflation and very low to negative real interest rates (the nominal interest rate minus the inflation rate) (Figure 1). The value of the dollar was also generally low, making American products relatively cheap, and the value of agricultural exports expanded more than fivefold during the period (Figure 2). Farmers responded to these favorable conditions by borrowing heavily to invest in new capital equipment, new and costly production techniques, and increasingly expensive farmland. Farm debt rose, on average, more than 10 percent a year and tripled by 1980. Land values rose even faster, creating the expectation on the part of both farmers and lenders that investment in agriculture would continue indefinitely to be highly profitable and relatively free of risk. In this environment of rapid expansion, U.S. agricultural production surged and agri-businesses and farm-based communities and regions prospered.

By the early 1980's, the factors that had given rise to economic expansion had reversed direction. Worldwide recession and the rise in the value of the dollar reduced the export demand for U.S. products. At the same time, relatively high loan rates for U.S. farm commodities, which set a floor under domestic prices of government supported farm commodities, provided incentives to other countries to substantially increase their grain supply. By 1984 these factors combined to sharply lower farm commodity prices, reduce farm income, and cut U.S. farm exports by 13 percent from the peak of 1981. On the cost side, farmers were hurt as inflation was slowed by stringent monetary

FIGURE 1

Major Economic Indicators in the U.S. Economy

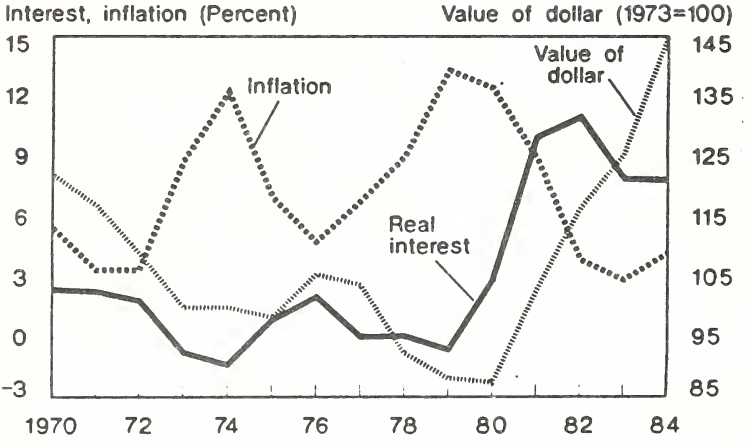
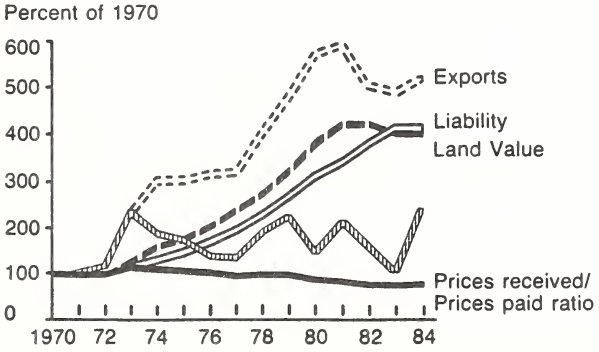


FIGURE 2

Major Economic Indicators in US Agriculture



controls, real interest rates rose to unprecedented levels of 8 to 10 percent, and prices paid by farmers began to exceed the prices they received. As net farm income plummeted, land values also declined because of expectations that returns to farming may be even lower in the future.1/ The debt levels that some farmers had incurred during the 1970's were no longer sustainable by their farming operations nor were they acceptable to their lenders in the changed economic environment of the 1980's. Farmland values in 1985 had declined 19 percent from their 1981 peak for the nation as a whole and values in some farm-dependent states and regions had fallen by almost 50 percent. As a result, many farmers who had borrowed heavily to purchase high-priced land and expensive farm machinery in the late 1970's found themselves approaching insolvency. For example, 7.3 percent of U.S. farmers in 1985 are very highly leveraged with a debt/asset ratio over 70 percent and some of them are operating under extreme financial stress.

The sharp deterioration of financial conditions in the farm economy is forcing some farmers to curtail operations or to discontinue farming entirely. Of course, the decline in the number of farmers has been an important trend throughout most of the history of U.S. agriculture. What is different about today's displacement, compared with some earlier ones, is the changed characteristics and economic position of the farmers who are leaving agriculture. The rapid reduction in the number of farms and farm population in the 1950's and 1960 was caused mainly by mechanization and other labor-saving innovations which enabled some farm families to cultivate more land, while the availability of higher income employment drew low-income agricultural labor into urban areas -- or enticed children of operators of small farms not to continue farming after the retirement or death of their parents. Today, displacement is occurring among the larger and more efficient farm operators who made investment decisions based on the favorable economic environment of the 1970's, a situation drastically different from the current environment of low farm prices, declining land values, and pessimism concerning the future of export markets. Because much of the economic distress now is concentrated among larger farmers, the current displacement may not be accompanied by a severe decline in the total number of farmers but rather by a change in the ownership of many existing farms.

IMPLICATION OF FARM FINANCIAL SITUATION FOR FARMING REGIONS AND COMMUNITIES

Impacts of the current stress in U.S. agriculture on regions and communities depend mostly on such factors as (1) the type of farming and current economic health of the farm sector in the region or community, (2) the dependence of the region or community on farming as a source of economic activity, (3) dependence on export-sensitive farm commodities (4) the strength of local farm linkages to agribusiness sectors in the region or community, and (5) the economic health of the overall economy of the region or community.

1/ The 1983 USDA's Payment-in-Kind program helped net farm income to more than double in 1984, but this was only an aberration to the 1980's trend of declining net farm income.

Economic Health of the Farm Sector

Current debt/asset ratios and recent changes in farmland values are used to assess the economic health of the farm sector. The ratio of debts to assets is one of the primary indicators of a farm's overall financial soundness. Typically, farms are considered to be highly-leveraged if their debt/asset ratios reach 40 percent. At this degree of leverage, farmers start having problems meeting principal repayments, but they still have adequate net worth to collateralize loans. At debt/asset ratios of 70 percent, many farmers start having problems meeting both their principal and interest commitments. If their net worth continues to decline (because of falling land values), many of these farmers will approach insolvency.2/

USDA's Farm Costs and Returns Survey, conducted in the spring of 1985, showed that the Northern Plains, Lake States, and Corn Belt have the highest proportion of highly and very highly leveraged farms. In each of these farm production regions a fourth of the farms are saddled with debt/asset ratios of 40 percent or more (Figure 3). The high proportion of farms under financial stress in the Midwest may be explained in part by the region's large number of cash grain and dairy farmers who have been particularly hard hit by lower commodity prices. The critical factor, however, has been the sharp declines in farmland values which have reduced asset values and thereby increased debt/asset ratios.

U.S. farmland values increased 58 percent during 1977-81, and then declined by 19 percent during 1981-85. Largest declines in farmland values occurred in the Corn Belt, Northern Plains, and the Lake States, which incurred losses of 33 percent or more (Figure 4). Whereas state-to-state percentage increases in farmland values during the earlier period tended to be somewhat uniform, declines since 1981 have been most dramatic in the major farm states of the Midwest. In Iowa and Nebraska the average value per acre of farmland has dropped more than 45 percent. In these states as well as in Illinois, Indiana, Kansas, Missouri, and Ohio the land value declines more than offset the gains made during 1977-81. For instance, the average value per acre of farmland in the Corn Belt had increased $652 during 1977-81, only to decline by $824 during 1981-85. Regions with high proportions of highly leveraged farms currently have experienced the greatest declines in land values (Figure 3). Regions which have experienced only slight decreases (or increases) in farmland values during the 1980's have relatively fewer farmers undergoing financial stress.

It is apparent that recent declines in land values are a major cause of the financial distress in the farm economy because farmland accounts for about three-fourths of total farm assets. Lower land values are creating problems

2/ By definition, farms are technically insolvent when their debt/asset ratios exceed 100 percent.

FIGURE 3

Changes in Farmland Values and Farm Stress Indicators

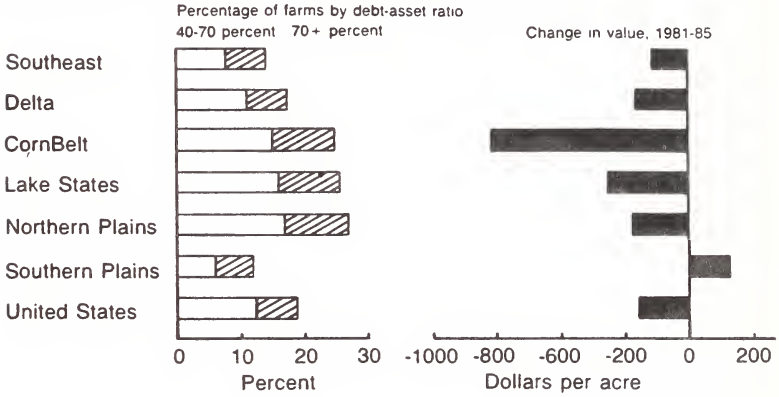
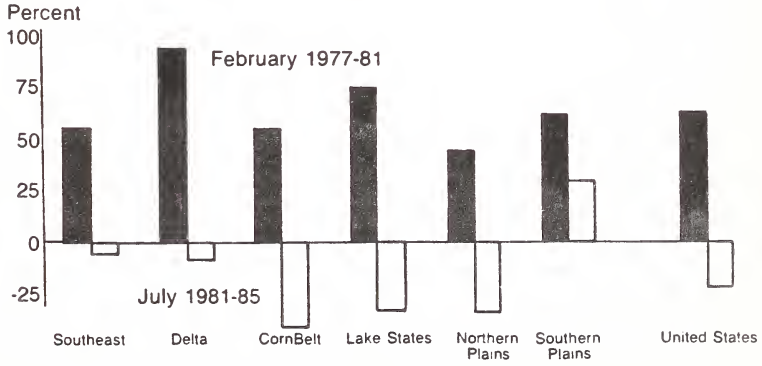


FIGURE 4

Change in Farmland Values



not only for farmers but also for farm related businesses and rural communities. For example, rural banks and credit institutions in farm-dependent areas are faced with a growing volume of problem loans; some local businesses are suffering losses as farmers are unable to pay for goods and services purchased on credit; and, rural communities which rely on farmland for their property tax base face budgetary problems and possible cuts in social services.

Dependence on Farming as the Primary Source of Economic Activity

Despite the growth of nonfarm job alternatives in nonmetro America since World War II, there still are 702 counties (out of 2,443 nonmetro counties) where farm-related earnings constitute at least 20 percent of all county earnings (Figure 5). About a third of the Nation's 2.3 million farmers, and 13 percent of the nonmetropolitan population, live in these counties. These counties produce one-third of the Nation's value of farm production. Nearly one-half of these counties are located in the Northern Plains (185 counties) and in the Corn Belt (134 counties). Their economies are based upon a heavily capitalized farming industry which is not only affected by agricultural conditions such as soil productivity and type of enterprise but also by changing interest rates, foreign exchange rates, and national agricultural policy decisions.

Depencence on Export-Sensitive Farm Commodities

Investment in the farm sector in the mid and late 1970's was spurred by the growth in U.S. farm exports. During 1975-81, the value of farm exports doubled. Farm commodities contributing heavily to this growth included corn, wheat, soybeans, and cotton. These commodities accounted for about three-fourths of the growth in U.S. farm exports form 1970 to 1981. Since their peak of 1981, exports of these commodities have declined 14 percent.

Decreased foreign demand, partly due to increased production by other countries, has reduced commodity prices and farm income. In states and communities where production of export-sensitive farm commodities is the dominant activity, reduced exports have translated into a slowdown in overall economic activity. This, in turn, has led to a loss of jobs and increased pressures for population outmigration.

Production of export-sensitive farm commodities is heavily concentrated in a few major producing states. In 1982, seven states produced 75 percent of the U.S. corn crop, 67 percent of the soybean crop and 61 percent of the wheat crop. The Corn Belt states of Iowa, Illinois, and Indiana produced 48 percent of U.S. corn and 40 percent of U.S. soybeans. Iowa, whose entire economy is highly dependent on farming and farm-related activities (such as manufacturing of farming machinery), produced one-fifth of U.S. corn and 15 percent of soybeans. Within these major producing states, those communities which have little economic activity outside the farm sector are currently hard pressed to find new options for future economic growth.

Dependence on export-oriented farm commodities is particularly acute in counties and regions whose economy is highly dependent on farming. Although

farm-dependent counties as a group are only slightly more dependent on export-oriented commodities than the U.S. as a whole, in the Corn Belt and in the Delta such counties are very dependent on commodities whose export markets had expanded rapidly during the 1970's, but declined substantialy during the 1980's (Figure 6). In these areas export-oriented commodities account for nearly one-half of all farm sales. In contrast, sales of export-oriented commodities in the farm-dependent counties of the Southeast account only for about 10 percent of total farm sales.

Strength of Farm Linkages to Agribusiness Sectors

The overall impact of agriculture on the local nonfarm economy depends on the size of the farm sector and how closely it is linked to the nonfarm sector. The impact is less where the role of production agriculture is small in the local economy. It is also less where farmers typically bypass local communities to purchase inputs or household items in larger, more distant trade centers, or where farm products and livestock leave the local area before much additional processing takes place.

In the U.S. nonmetro economy the farm production sector accounts for about 15 percent of all employment. Employment in agricultural processing and marketing industries and in agricultural input industries account for an additional 6.0 and 1.2 percent, respectively (Figure 7). This means that for every 100 farm production workers in the U.S. nonmetro economy (farm operators and hired farm workers) there are 50 additional workers who are directly linked to agricultural inputs, processing, and marketing industries. In the 702 farm-dependent counties, interindustry linkages within the agricultural complex are only half as strong, for every 100 farm production workers there are only about 20 workers in the farm-related sectors. Weaker linkages in the farm-dependent areas suggest that (1) farmers in such areas have to look for many services outside the area and (2) that such areas tend to depend on farm commodities requiring less processing and marketing activities than is the case for U.S. farm commodities in general.

Health of the Local and Regional Economy

Economic stresses stemming from problems in agriculture can be offset, to some extent, by off-farm economic opportunities. This is especially true for the small- and medium-size farm operators who rely on the nonfarm economy for their principal source of employment and income. The relative importance of total farm income earned from off-farm sources has increased in the United States, from an average of about 40 percent in 1960, to 55 percent in 1979, and around 60 percent since 1981. This dramatic reliance on off-farm income obviously dampens the impact of farm-related stress for communities, states, and regions. This may be particularly true in the more densely-populated and smaller-farm regions such as the Northeast and the South where off-farm income accounted for 64 percent of total farm income in 1979. In contrast, off-farm income appears to provide much less relief to farm families in the sparsely-settled Midwest and West where only 47 percent of total farm income came from off-farm sources.

FIGURE 5
Farming-Dependent Counties



Counties are defined as those with 20 percent or more of labor and proprietory income from farming 1975-79

FIGURE 6
Dependence on Export-oriented Commodities

Percent of farm sales from wheat, corn, soybeans and cotton

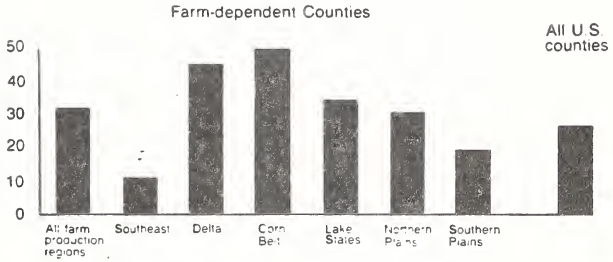
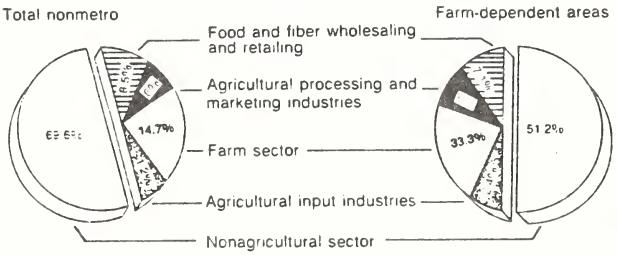


FIGURE 7
Agriculture-related Employment, 1982



In 1982, 27.9 percent of all U.S. farm operators worked 200 days or more in off-farm jobs (Figure 8). But, in many farm-dependent areas such off-farm employment opportunities are not prevalent, or if they are, the structure of farming precludes farm operators from participation in off-farm employment. The lack of off-farm opportunities appears to be the case in the farm-dependent counties of the Northern Plains and the Corn Belt were the percentage of farm operators reporting off-farm work was substantately below the U.S. average. In farm-dependent counties of the Lake States, the low percentage of farmers with off-farm work probably resulted from farm structure, that is, specialization in dairy operations. In the farm-dependent areas of the Southeast, on the other hand, the portion of farmers who worked off-farm was much higher than nationwide. This is a reflection of the prevalence of nonfarm alternatives brought about by changes in the industrial structure of the Southeast during the 1960's and 1970's. It is also an indicator of how nonfarm job alternatives can dampen a region's or community's vulnerability to the current financial crises in farming.

Historically, the continual movement of large numbers of workers out of farming has been made possible by the growth and attractiveness of nonfarm job opportunities. But, the overall economic growth during the early 1980's has been extremely weak in today's most farm-dependent states and regions. This is especially true, for example, in the farm-dependent counties of the Corn Belt where overall employment has continued to decline since 1979 (Figure 9).

Economic revival in the farm-dependent states and regions has been stymied not only by the depressed farm sector but also by the slow recovery of other industries, especially manufacturing, from the 1982 recession. Slow growth in nonfarm industries has made it difficult for farmers, who rely on the nonfarm economy to supplement their farm income, and for displaced workers from farming and farm-related businesses to find other jobs.

A major results has been the continued loss of population in many farm-dependent areas. For Instance, the top one-third of the counties most dependent on farming had the highest proportion of counties that lost population during 1960-70, 1970-80, 1980-82, and in 1982-84 (Figure 10). During 1980-82 and 1982-84 almost three-fifths of these counties lost population. A substantial proportion (40 percent) of the less farm-dependent counties also recorded population losses during 1982-84. These high proportions stand out in sharp contrast to those experienced in other parts of nonmetro America where only 9 percent of the counties lost population during the seventies and 29 percent during 1982-84.

Population change among farm production regions presents a more diverse picture. It is not surprising to discern that a high proportion of farm-dependent couties in the Corn Belt, Northern Plains, and Lake States lost population during 1982-84 (Figure 11). The Lake States stand out as having the highest proportion (73 percent) of farm-dependent counties with population losses, compared with the Southeast which registered one of the lowest proportions (31 percent). The general pattern in the farm production regions

FIGURE 8
Dependence on Off-farm Employment

Percent of farm operators
working 200 or more days off-farm

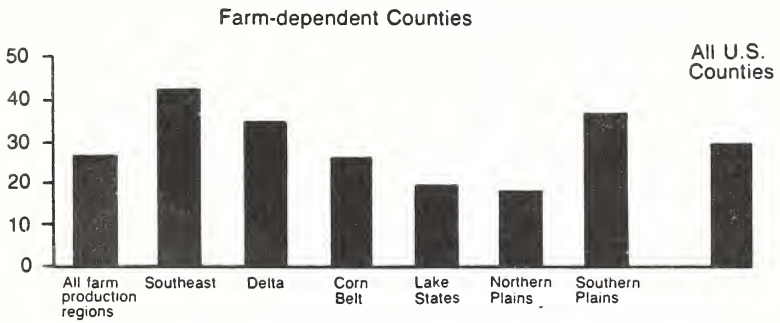


FIGURE 9
Overall Employment Growth

Percent of 1976

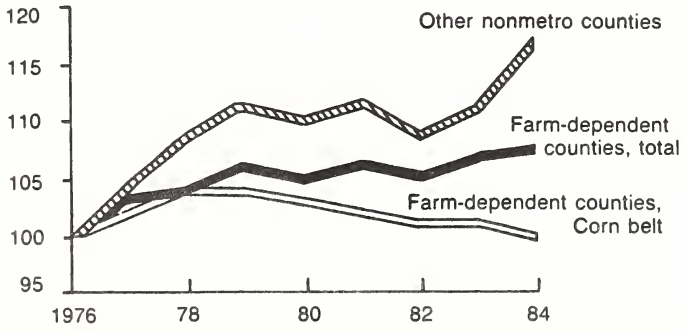


FIGURE 10

Proportion of Counties Losing Population

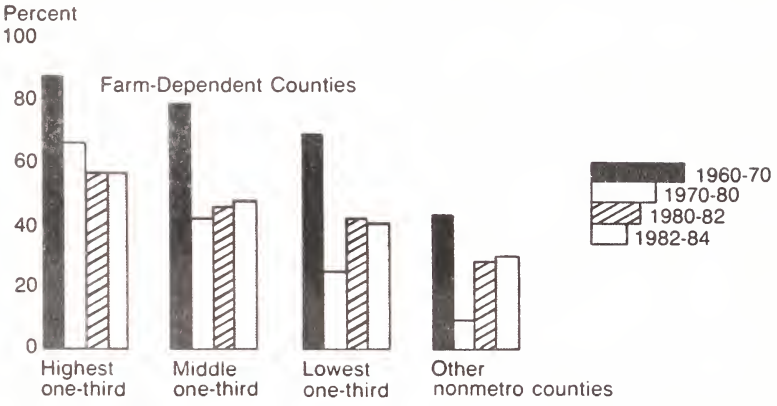
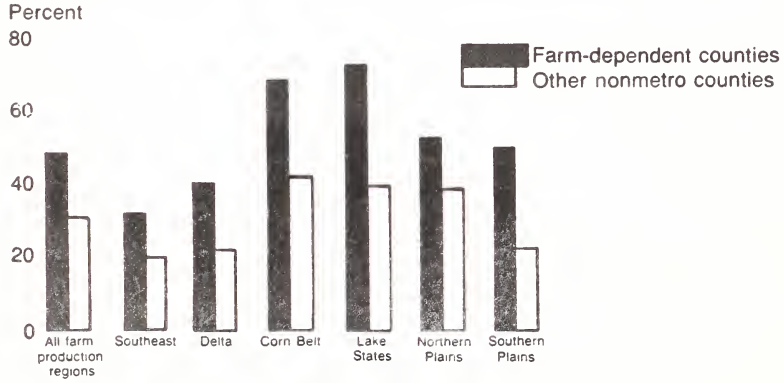


FIGURE 11

Proportion of Counties Losing Population, 1982-84



appears to be one where the farm-dependent counties have been and are much more prone to losing population than has been the case in other nonmetropolitan counties.

CONCLUSION

The potential consequences of resource adjustments in response to lower commodity prices, lower farmland values, and higher real interest rates are affected by many factors. For farmers, many of the factors are outside of their control, e.g., climate, soil type, local industrial structure, and national and international economic conditions. Similarily, rural communities that depend heavily on farming have many specialized human and business assets that are not as useful elsewhere in the economy. However, it is likely that major economic dislocations in rural America will be largely confined to the Midwest and to the Delta sub-regions of the South. Even in the Midwest the effects will be extremely uneven, because dependence on agriculture is so varied. But, it is quite clear that adjustments will be most severe for those who live in the several hundred sparsely-settled specialized farming areas which are highly concentrated in a few States.

The transition to a more diversified economy in farm-dependent counties will be difficult at best. It is made difficult by the small population of the farm-dependent counties, their geographic concentration in areas distant from most major urban markets, and their legacy of population decline which has left them with a highly dependent population structure (high proportion of young and elderly).

During the past 30 years the economic structure of rural America as a whole has become more diversified, significantly reducing its overall vulnerability to changes in natural resources markets, commodity prices, and farm conditions. For most rural citizens, their economic futures are now more tied to overall national growth than to any one sector's success or failure. But this is not the case for farming-dependent rural counties, or for those individuals residing elsewhere whose economic fortunes are directly tied to agriculture.

EFFECT OF THE FARM FINANCIAL SITUATION ON RURAL BANKS

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The farm sector is in the midst of a difficult financial and structural transition. Farm-sector returns are depressed and farm real estate values have declined sharply over the last year. Forecasts of market conditions facing U.S. agriculture for the next several years suggest little prospect for improvements in demand for farm products sufficient to justify the high prices paid for farm land in the late 70's. As a result, some farmers who purchased high priced land through debt financing are now experiencing significant financial stress. Furthermore, financial problems of farmers have spread to the agribusiness sector and rural communities generally, both directly through farmers' reduced purchasing power and indirectly through the farm sector's adverse effect on rural lenders.

This paper examines the effect that farm financial problems are having on rural commercial banks and, through banks, on communities serving agricultural areas of the country. Before addressing this issue, we present a brief overview of the farm sector's financial condition, along with its implication for farm lenders generally.

FARM FINANCIAL CONDITIONS

While most farmers are in tolerable financial condition, USDA's January 1985 Farm Cost and Returns Survey indicated that 10 to 12 percent of farm operators were in serious financial stress as measured by the combination of a high debt/asset ratio and a negative cash flow [2]. Developments since January in commodity and land markets suggest that the farm financial situation has worsened. There is little likelihood that many of these farmers can, on their own, solve their current financial problems and remain in farming.

Financial problems in the farm sector reflect an inability to service the existing interest repayment and debt load of the sector from total operator earnings. These problems have been made critical by a fundamental downward adjustment of asset values. Nearly $150 billion in owner's equity was lost through land value depreciation between 1981 and 1985. This reflects a 19 percent nationwide decline in the value of farmland during this four year period. In the Midwest, declines in the average value of farmland approached 50 percent over this period [3]. Recent evidence indicates that land values have continued to fall in some parts of the country, particularly in the Midwest, during 1985. As a result, owner's equity (principally in land) can no longer shield the sector from its inability to repay its debt from current and expected future earnings. Farmer income is often too low to keep loan payments up-to-date and farmer assets are too low to allow debt to be rolled over, forcing an increasing number of farmers to quit farming. 1/

Besides causing an increasing number of farm failures, financial stress in the agricultural sector has also contributed to depressed economies in many rural communities and failures by nonfarm rural businesses. As farmers attempt to cope with lower commodity prices and declining asset values, the financial viability of farm machinery firms and other agricultural input suppliers is threatened. The drop in farm income also affects retailers serving heavily agricultural areas as farm families reduce their discretionary spending. As a result, current problems within the agricultural sector have adversely affected the general rural economy, especially in the Midwest.

FARM LENDER CONDITIONS

Financial problems in the agricultural sector get transmitted eventually to farm lenders. As cash flow problems cause farmers and farm-related businesses to fall behind on loan payments, the quality of lender loan portfolios deteriorates, loan loss reserves have to be increased, and profit margins decline. As agricultural lenders adjust to problems with their farm loans, their portfolio decisions can affect credit availability for the community at large.

The major institutions involved in agricultural lending are the Farm Credit System, the commercial banking system, and the Farmers Home Administration. These three lenders held over two thirds of total farm debt outstanding at the beginning of the year (table 1). Remaining farm debt was held by individuals, life insurance companies, the Commodity Credit Corporation, and other lenders.

The USDA's Farm Cost and Returns Survey (FCRS) is the most reliable source of nationwide data suitable for assessing fundamental problems with each major lender's agricultural loan portfolio. The FCRS surveys farm operators to determine their cash flows and debt burdens, among other characteristics. Based on the most recent survey, farms which produced at least $1,000 worth of agricultural products or spent at least $1,000 for equipment and supplies to produce agricultural products owed $118 billion in farm debt. The remaining $95 billion in farm debt outstanding was presumably owed by very small farming operations, or by nonoperator landlords.

Based on current prices for agricultural products, input costs, and asset values, most farms probably start having difficulties meeting debt commitments at debt/asset ratios of around 0.4 [2, p.5]. Therefore, debt owed by farm operators with negative cash flows (i.e. farm and nonfarm income is insufficient to pay current production expenses, debt repayment, and family living expenses) and with debt/asset ratios of 0.4 or more is considered risky. Of this, debt owed by farm operators with debt/asset ratios of 0.7 or more is considered very risky. Barring some form of government intervention, or unexpected improvements in commodity prices, a sizable portion of the very risky debt is likely to be uncollectable within a year or two.

Table 1 presents FCRS estimates of the amount of each major lender's portfolio that is at risk based on the combination of a negative cash flow and a high debt/asset ratio for farm operators. Roughly 45 percent of the debt owed by farm operators to the Farm Credit System, commercial banks, and other non-FmHA lenders is considered risky. Being the "lender of last resort," over 60 percent of the FmHA's farm operator loan portfolio is at risk. The proportion of each lender's agricultural loan portfolio that is very risky varies from 20 to 40 percent of farm operator debt outstanding. Even assuming that the $95 billion in debt not covered by the FCRS survey is safe, these figures still translate into hefty potential losses for farm lenders.

Heavy losses by any of the major farm lenders can have a detrimental effect on rural communities. The Farm Credit System's (FCS) lending activity is almost exclusively for agricultural purposes. If the FCS continues to experience large loan losses, the interest rates it charges will increase, potential borrowers may be turned away, and financially sound farmers may find less costly sources of credit. The net result could be a reduced level of lending by the FCS, which implies a reduced flow of funds into rural communities. While this could have a profound indirect impact on the rural economy, direct effects would be restricted to the agricultural sector unless the FCS defaults on its own securities. The same can be said of the FmHA's farm lending programs. High loan loss rates might lead Congress either to increase or decrease FmHA's lending authority, but they have little impact on FmHA's current lending decisions. These decisions are important for rural communities, but the direct impact is limited to agriculture.

Of the major lenders, only commercial banks actively serve the credit needs of farm and nonfarm rural businesses alike. Thus, bank operations directly and broadly affect the economy in rural communities. The remainder of this paper looks at the impact financial stress among farmers is having on commercial banks and what this means for rural communities.

AGRICULTURAL BANKS AND FARM FINANCIAL STRESS

Over half of the commercial banks headquartered in rural America are defined as "agricultural banks" by the Federal Reserve Board, meaning they have a higher than average concentration of agricultural loans within their loan portfolios. As a group, rural banks, and even agricultural banks continued to show a strong capital position through the end of 1984. Nonetheless, several signs indicate that the current financial problems being experienced by farmers are having a detrimental effect on some agricultural banks.

Much of the eight-fold increase in the number of annual bank failures since 1981 has been among agricultural lenders. As of October 31, 94 commercial banks have failed in 1985 -- a post depression high; 51 of the failed banks were agricultural. Nonetheless, these numbers are far below the 600 bank

Table 1--Farm debt held by major lenders, January 1985.

Lender	Total farm debt 1/	Farm operator debt 2/		
		Total	Portion considered: Risky 3/	Very risky 4/
	---$Billions---		---Percent---	
Farm Credit System	67.9	41.2	44.7	20.5
Commercial banking system	49.9	33.3	45.0	21.7
Farmers Home Administration	25.7	15.9	63.4	40.0
All others	69.4	27.6	45.7	23.0
Total	212.9	118.0	47.6	24.0

1/ Federal Reserve Board of Governors, Agricultural Finance Databook.
2/ Economic Research Service, Farm Cost and Return Survey.
3/ Debt owed by farm operators with negative cash flows and debt to asset ratios of 0.4 or more.
4/ Debt owed by farm operators with negative cash flows and debt to asset ratios of 0.7 or more.

Table 2--Potentially vulnerable commercial banks and bank failures.

Item	Dec. 1982	June 1983	Dec. 1983	June 1984	Dec. 1984	June 1985
Past due and nonperforming loans greater than capital: 1/	------Number of Banks------					
Agricultural banks 2/	94	96	133	195	239	302
Other banks	365	323	320	276	375	387
Total	459	419	453	471	614	689
Bank failures during the preceeding 6 months:						
Agricultural banks	6	2	5	10	22	34
Other banks	14	24	14	33	13	18
Total	20	26	19	43	35	52

1/ Includes loans past due 30 days or more and still accruing interest, nonaccruing loans, and renegotiated loans.
2/ Commercial banks with a ratio of agricultural loans to total loans greater than the unweighted average for all insured commercial banks.
Source: Federal Reserve Board of Governors [1].

failures recorded annually during the 1920's and the failed banks are generally small.

Equally troublesome within a credit availability context is the growing number of agricultural banks experiencing serious financial problems. Between June 30, 1983 and June 30, 1985, the number of agricultural banks at which past due and nonperforming loans exceeded bank capital increased 215 percent. Over the same period, the number of "vulnerable" nonagricultural banks increased by only 20 percent (table 2). A similar trend is evident from the Federal Deposit Insurance Corporation's "problem bank" counts. The FDIC considers a commercial bank to be agricultural if 25 percent or more of its loan portfolio is in agricultural loans. Between January 1, 1984 and September 30, 1985, the number of agricultural banks on the FDIC's "problem bank" list increased by nearly 170 percent, to 390; the rate of increase among other commercial banks over this period was 35 percent, to 617 banks. The FDIC places a bank on its problem list when it determines that substantive corrective action is needed to prevent the bank from failing. Attempts by "problem" agricultural banks to cover bad loans may reduce the availability of credit to existing customers and to new businesses. In areas with a high incidence of problem banks, a lack of local credit may impede future growth.

The extent to which farm financial problems will ultimately affect the overall stability of the commercial banking system is open to question. Agricultural loans and bank holdings of Farm Credit System securities combined amount to only 3 or 4 percent of the banking system's total assets (and most of this is not seriously at risk given current estimates of the number of farms experiencing loan repayment problems). Nonetheless, continuing farm financial stress could seriously affect the banking systems serving several States. The majority of the total volume of commercial bank lending in Iowa, North Dakota, and Nebraska is by agricultural banks (figure 1). Commercial bank credit availability in these and several other States is very sensitive to developments in the agricultural sector.

For many rural businesses, it is credit availability at the local level that matters, not credit conditions at the State or National levels. Deteriorating loan quality would most probably have a detrimental effect on the banking systems serving those local economies highly dependent upon agriculture as a source of income. While many of these communities are located in the Midwest, they are present in other regions of the country as well.

BANKS SERVING AGRICULTURAL COUNTIES

Most of the 1,618 counties in the U.S. with one or more agricultural bank headquarters are served by other banks as well; indeed, many are metropolitan counties with highly competitive, diversified local banking structures. The same cannot be said for many of the 702 agricultural counties in the 48 contiguous States -- nonmetropolitan counties in which 20 percent or more of total labor and proprietory income was derived from

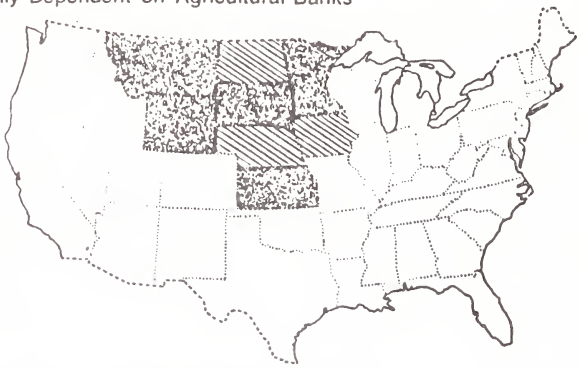
farming over the 1975-79 period (figure 2). 2/ These agricultural counties average 3.4 bank headquarters; the average number of bank firms serving agricultural counties (i.e. bank headquarters or the branch(s) of a bank headquartered outside of the county) is 3.9. While these averages are considerably lower than those for metropolitan counties, they are similar to the averages for nonmetro counties as a whole. But averages mask the fact that about 2 percent of agricultural counties have no office of a commercial bank. A further 16 percent of agricultural counties are served by only one bank with an office in the county, and an additional 22 percent rely on only 2 bank firms for their local supply of loanable funds (table 3). Local access to credit could be significantly affected by the current financial condition of agriculture in these counties if a local bank has to adjust its loan portfolio.

A commercial bank can take several steps when it experiences deteriorating quality in its agricultural loan portfolio. If the bank serves an area characterized by a highly diversified economy with unmet loan demand by the nonfarm sector, it can shift its loan activity away from financially strapped farmers toward nonfarm businesses. Banks with branches across the State or banks which are part of a multibank holding company (MBHC) are likely to find it easiest to shift loanable funds away from the agricultural sector. Unit banks, on the other hand, are more likely to face a localized market for their services. The continued viability of a unit bank tends to be tied to the economic viability of local borrowers. If a high percentage of local borrowers are farmers experiencing financial problems, as might be expected in many agricultural counties, unit banks may make every legal effort to continue servicing farm credit needs in spite of their borrowers' cash-flow problems.

Even when the bank has the option of shifting loanable funds away from agriculture and finds this a prudent longer-term strategy, it may not radically alter its loan activity over a short time period. To do so might force those farmers denied credit extensions into bankruptcy, converting problem loans into actual losses. Thus, commercial banks may choose to extend additional credit to farmers experiencing cash-flow problems, allowing them to continue to operate in the hope that the farmer's financial plight will improve enough for him to continue servicing his loan requirements. Such a strategy obviously has its limits and is not without costs. Extending additional credit to risky borrowers reduces the overall quality of a bank's loan portfolio. Bank regulators would require that the bank increase its loan loss reserves. This tends to reduce the bank's ability to service the credit needs of other local borrowers. Thus, in continuing to support financially strapped farmers, commercial banks may have to reduce their loan activity to financially sound farm and nonfarm businesses. Depending upon local market conditions, banks serving agricultural areas of the country may also raise the interest rates and/or collateral required of all their loan customers to recoup the higher costs of serving risky farm borrowers.

To the extent that communities are served by a diversified, competitive bank structure, problems experienced by individual banks will have less of

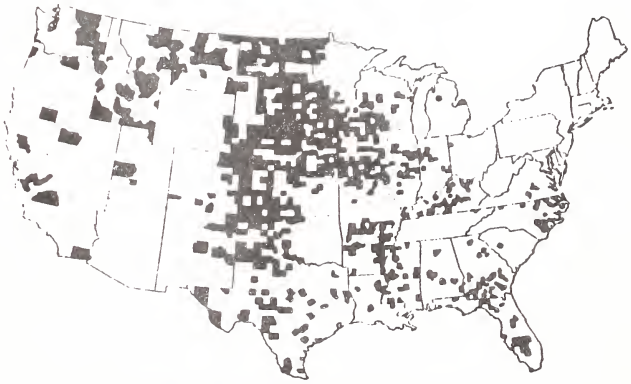
Figure 1:
States Highly Dependent on Agricultural Banks



Agricultural banks account for over 50 percent of total bank loans
Agricultural banks account for 20 to 50 percent of total bank loans

Source: Federal Reserve Board of Governors, Report of Condition and Income, June 1985.

Figure 2:
Farming-Dependent Counties



Note: Delineated by Bernal Green and Peggy Ross, EDD, ERS, U.S. Department of Agriculture. Counties are defined as those with 20 percent or more of labor and proprietory income from farming, 1975-79

an impact on local credit availability. The number of banks serving a community is one indicator of the degree of competition among local lenders. However, in agricultural counties, large numbers of banks, all heavily dependent on the economic health of the local farming sector, do not guarantee a stable local supply of credit. Of the 689 agricultural counties served by one or more commercial bank firms, only 32 percent are served by a "nonagricultural bank" that might be more insulated from the financial condition of local farmers. If the nonfarm sector is also affected by the farm sector, the presence of a bank not dependent on agriculture is less likely to provide a continued local source of credit. This seems likely in many agriculturally-dependent communities since financial problems experienced by farmers tend to depress the local economy. 3/ Even nonagricultural lenders are likely to find their deposit base growing only slowly, if at all, and losses on the nonfarm loans they have made to local businesses increasing. The presence of a branch of a large bank, or a bank which is a member of a large multibank holding company would be a better indication that the local banking system could withstand prolonged agricultural stress. 4/ Only 27 percent of agricultural counties have a large bank or a large MBHC bank operating within their borders (table 3). Thus, most agriculturally-dependent counties lack direct service by larger, more diversified financial institutions.

Given the character of the banking systems serving agricultural counties, it is not surprising that agricultural loans make up a high percentage of the total loans made by banks with offices in agricultural counties. The typical bank serving agricultural counties tends to be a small agricultural bank, except in statewide branching States where large regional and money center banks significantly raise the mean size of banks serving agricultural counties. For the average bank serving agricultural counties, 45 percent of loan volume was for agricultural purposes, compared to 11 percent for the average bank with no office in an agricultural county. The relative dominance of agricultural loans is greatest for banks serving agricultural counties in unit banking States, and smallest for banks serving agricultural counties in States which allow statewide bank branching.

For the majority of agricultural counties, heavy involvement in agricultural lending makes the local banking system vulnerable to deteriorating financial conditions in the farm sector. The ability of the local banking systems in unit banking and limited branching States to continue providing credit within agricultural counties may be particularly hampered because of the small size of their banks and the scarcity of larger, more diversified financial institutions.

CURRENT CONDITIONS AND FUTURE PROSPECTS

The depressed farm economy has already taken its toll on many of the banks serving agriculturally-dependent counties. Of the 89 commercial banks that failed prior to October 11, 1985, 26 were headquartered in agricultural

Table 3--Structure of local commercial banking systems, June 1983.

Banking system characteristic	Type of County		
	Metro	Nonmetro	
		Total	Agricultural
	------Percent------		
Number of bank firms: 1/			
None	0	1	2
1 or 2	6	29	37
3 or 4	14	33	28
5 or more	80	36	33
Banking system includes:			
A nonagricultural bank	98	68	33
A large bank 2/	60	23	11
A large MBHC bank 3/	71	34	25
Either a large bank or a large MBHC bank	79	41	27

1/ The number of FDIC-insured commercial banks either headquartered or operating a bank office within the county.
2/ Either the headquarters or a branch office of a bank with total assets of $500 million or more.
3/ An affiliate of a multibank holding company with combined bank assets of $500 million or more.
Source: Calculated from the Summary of Deposits file, Federal Deposit Insurance Corporation and the Report of Condition and Income file, Federal Reserve Board of Governors.

Table 4--The simulated effect of varying loss rates for agricultural loans on the capital position of commercial banks, 1984. 1/

Assumed loss rate on agricultural loans	Primary capital as a percentage of assets			
	Under 2%	2 to 5.5%	5.5 to 8%	8% or more
	------Percent of U.S. Commercial Banks------			
None (Baseline)	0.8	2.5	20.4	76.3
2 percent	1.1	2.8	22.9	73.1
5 percent	1.3	3.6	27.0	68.0
7.5 percent	1.5	5.0	29.7	63.7
10 percent	1.9	7.3	30.9	59.9
25 percent	10.9	14.8	28.9	45.4
	------Percent of Banks in Ag Counties------			
None (Baseline)	0.8	2.7	10.7	85.8
2 percent	1.1	3.5	16.8	78.6
5 percent	1.8	5.6	26.8	65.8
7.5 percent	2.4	10.3	32.0	55.3
10 percent	3.5	17.2	33.8	45.6
25 percent	34.5	28.5	19.1	17.9

1/ Simulation allows estimated bank profits to offset losses on agricultural loans. Primary capital and assets include loan loss reserves. Percentages are based on a total of 14,457 U.S. commercial banks and 2,371 banks headquartered in agricultural counties.
Source: Calculated from the December 31, 1984 Report of Condition and Report of Income file, Federal Reserve Board of Governors.

counties. This amounts to an annual failure rate of nearly 1.5 percent -- more than twice the failure rate for banks headquartered elsewhere. As of June 1985, the percentage of agricultural production loans classified as nonperforming averaged 5.6 percent for banks headquartered in agricultural counties; it was only 3.3 percent for banks headquartered elsewhere. Over 25 percent of banks headquartered in agricultural counties had nonperforming loans in excess of 8 percent of their production loan portfolio. These banks are already having to make adjustments which could curtail their lending activities.

It is difficult to predict, based on publicly available data, which rural banks will be severely affected if financial problems persist in agriculture. The actual losses the commercial banking system could expect to incur, given a fixed level of farm bankruptcies, depend on several factors: the number of troubled farmers with loans from commercial banks, the value of their assets, the number of other creditors involved in the bankruptcy proceedings, and the order of their claims against farm assets. Based on the Farm Cost and Returns Survey, anywhere from 14 to 22 percent of commercial bank loans for agriculture are very risky; 30 to 45 percent of commercial bank agriculture loan portfolios could be considered risky if problems persist in the farm sector. When coupled with the facts that 81 percent of commercial bank agricultural loans are for operating capital (which would normally not have first claim against farm assets) and that farm real estate values and the resale value of used farm equipment continue to decline, it appears likely that commercial banks, particularly those in agricultural areas, may incur substantial losses if farm financial problems persist.

Simulations based on loan portfolios and profit rates at the start of 1985 show that, if commercial banks write-off 10 percent of the value of their agricultural loan portfolio over the course of a year, roughly 2 percent would be placed in imminent danger of failure, with primary capital falling below 2 percent of assets (table 4). Over 9 percent of commercial banks, serving 913 counties (297 of which are agriculturally-dependent counties), would have primary capital falling below 5.5 percent of total assets -- the minimum level established by new guidelines of the Federal Reserve Board. In four States -- Nebraska, Idaho, South Dakota, and Iowa -- more than 20 percent of the commercial banks would have inadequate levels of capital after writing off 10 percent of their farm debt. Among banks headquartered in agricultural counties, 4 percent would be in imminent danger of failure and nearly 21 percent would have inadequate levels of primary capital following a 10 percent farm loan write-off.

While these simulation results are based on a very high write-off rate by historical standards, they may not be unrealistic for some midwestern banks with large loan concentrations in cash grain farming. Furthermore, to the extent that this simulation exercise identifies the number of banks which will have to make adjustments to cover farm loan losses (rather than the number that will fail), it serves its purpose. It is the adjustment of the commercial banking system to the farm sector's financial problems which ultimately affects rural communities.

IMPLICATIONS FOR RURAL CREDIT

While the financial problems being experienced by the Farm Credit System are attracting most of the attention on Capitol Hill and in the popular press, problems faced by agricultural banks are at least as severe. These problems have already resulted in the failure of 51 agricultural banks this year, amid predictions that agricultural bank failures will increase again next year.

While bank failures dramatically portray the problems being experienced by farm lenders, they generally do not have as devastating an impact on local banking services as many fear. While bank failures do impose costs on a community, based on Federal Deposit Insurance Corporation data on insured banks, the majority of failed rural banks are reopened almost immediately under new ownership. 5/ As troublesome from a credit availability point of view is the growth in the number of agricultural banks experiencing serious financial problems. As banks adjust their lending decisions to deal with weaknesses identified by bank regulators, "marginally qualified" borrowers are likely to be denied credit. This may force some farmers into bankruptcy, but it will also reduce credit availability for nonfarm rural businesses, putting rural communities in agricultural areas of the country at a comparative disadvantage in attracting new businesses and holding existing firms. Depending upon the size and structure of the local banking system, this could dampen the growth potential of the local nonfarm economy at a time when off-farm employment may be critical to the ultimate survival of the family-sized farm and to the economic wellbeing of people displaced from agriculture.

Agricultural communities located in unit banking and limited branching States have local banking systems heavily involved in agricultural loans. Furthermore, since the viability of small agricultural banks is tied to the economic vitality of local borrowers, these banks will likely make every effort to service the credit needs of farmers in spite of their cash-flow problems. This may help some farmers who would otherwise be denied credit, but could depress the community's economy if local banks support agriculture at the expense of the nonfarm sector.

Agricultural communities with branches of a large bank or affiliates of a large multibank holding company are likely to find themselves in a different situation. Creditworthy borrowers should continue to have access to credit despite the financial condition of the agricultural sector, but farmers experiencing cash-flow problems may find it more difficult to obtain financing if they have traditionally gone to the branch of a large bank for their credit needs.

NOTES

1/ While reliable information on the number of farmers being forced out of business is unavailable, results of several recent surveys of agricultural lenders and extension agents indicate that the trend is toward more farm failures [4].

2/ These 702 counties are home to approximately one-third of the total number of farmers in the U.S. and accounted for an equal share of agricultural sales in 1982.

3/ As of June 1985, the proportion of nonagricultural loans classified as nonperforming was 3.8 percent for banks headquartered in agriculturally-dependent counties and 2.6 percent for banks headquartered elsewhere.

4/ Of course, bank operating policy is an important factor in determining how helpful "outsider" banks are in stabilizing credit conditions in agriculturally-dependent counties. At this point, we can say that branches of large banks should have the resources available to continue extending credit; we can't say that credit will continue to be extended, however.

5/ A bank failure can threaten uninsured deposits, can cause serious problems for loan customers with past due, nonperforming, and undercollateralized loans, and can alter the availability of credit within a community. Furthermore, in the 10 percent of cases where an assuming bank is not found, a bank failure results in the permanent closure of the bank.

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AND RURAL COMMUNITIES

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INTRODUCTION

Many American farmers are facing their most severe financial crisis since the 1930s. An unprecedented proportion of farmers are experiencing financial stress and may be forced to quit farming within the next five years as a result of low commodity prices, high interest rates, and falling land values.

The U.S. Department of Agriculture [5] estimates that nearly one-third of the nation's commercial farms (i.e., those with annual sales over $40,000) are experiencing financial difficulties as evidenced by their high debt load and/or negative net cash flow. This development is particularly critical because commercial farms account for about 90 percent of all farm sales, although they make up only 34 percent of the nation's farms. Financially stressed farms tend to be concentrated in the Corn Belt, Northern Plains, and Great Lakes states[1]--areas which have recently experienced substantial declines in land values [5]. The areas in which financially stressed farmers are concentrated tend also to be ones where the economic dependence of rural communities on agriculture is quite high.

A rapid increase in the number of farm failures is likely to lead to a substantial decline in the total number of farms and farm families in many rural areas. A decline in farm numbers could, in turn, have very serious implications not only for the affected farm families but also for agribusiness firms, for the entire trade and service sector in many agricultural trade centers, and for such public services as primary and secondary schools. The magnitude of such effects has been difficult to estimate, however, because of the lack of specific information concerning the socioeconomic characteristics of financially troubled farmers.

This paper presents the results of a study designed to identify key characteristics of farm operators and their families (particularly those

[1]Corn Belt is defined here as the states of Illinois, Indiana, Iowa, Missouri, and Ohio; Northern Plains comprises Kansas, Nebraska, and North and South Dakota; Great Lakes states are Michigan, Minnesota, and Wisconsin.

whose current financial status suggests they are vulnerable to being displaced from farming) and thus to provide insights concerning (1) adjustments likely to be faced by the affected farm operators and their families and (2) impacts likely to be experienced by agriculturally dependent rural communities. Specific characteristics examined include the following:

1. Financial characteristics, such as levels of assets, debt, and income

2. Demographic characteristics, such as age, marital status, family size, and education

3. Employment history and vocational skills and preferences

Information concerning these characteristics was obtained during March and April of 1985 from a telephone survey of randomly selected farm operators in North Dakota and Texas. Initial screening questions in these interviews were used to ensure that all respondents were less than 65 years old, were operating a farm, considered farming to be their primary occupation, and sold at least $2,500 of farm products in 1984. A total of 1,953 farmers completed the survey (933 in North Dakota and 1,020 in Texas) for a response rate of 75 percent. A comparison of the survey data with the 1982 Census of Agriculture revealed a close correspondence with those farm and ranch operations in the respective states whose operators consider farming to be their principal occupation.

CHARACTERISTICS OF FARM OPERATORS

The characteristics of North Dakota and Texas farm operators who responded to the survey are summarized in this section.[2] The summary is organized into three major parts which describe financial, demographic, and employment characteristics, respectively. A subsequent section of the paper then discusses the implications of these characteristics with respect to likely impacts of the current farm financial situation on farm operators and rural communities.

Financial Characteristics

The financial characteristics of North Dakota farm and ranch operators surveyed are shown in Table 1. Of the North Dakota farmers, 79 percent had gross farm incomes of $40,000 or more in 1984, compared to 69.5 percent in Texas. About 72 percent of the North Dakota farms had gross incomes in the range of $40,000 to $250,000, and 54 percent of Texas farms fell into this range. Net cash farm income is gross farm income less gross

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[2]This paper highlights results from a more extensive analysis. For more detailed information, see [7, 8, 10]. Other personnel contributing to this study include Harvey Vreugdenhil and Brenda Ekstrom of North Dakota State University and Don Albrecht and John Thomas of Texas A&M University.

TABLE 1--Gross Farm Income, Net Cash Farm Income, Total Assets, Total Debt, and Debt-to-Asset Ratio of North Dakota and Texas Farmers, 1984

Item	Units	North Dakota	Texas
Gross farm income			
Average	Dollars	105,317	147,907
Distribution:			
Less than $40,000	Percent	21.1	30.5
$40,000 to $99,999	Percent	40.1	28.8
$100,000 to $249,999	Percent	31.6	25.5
$250,000 to $499,999	Percent	5.1	9.3
$500,000 and over	Percent	2.1	5.8
Net cash farm income			
Average	Dollars	14,897	13,095
Distribution:			
Negative	Percent	24.0	49.8
$0 to $9,999	Percent	21.2	21.0
$10,000 to $19,999	Percent	24.5	9.2
$20,000 to $49,999	Percent	23.4	13.4
$50,000 to $99,999	Percent	5.9	4.7
$100,000 and over	Percent	1.0	2.1
Total assets			
Average	Dollars	423,042	909,605
Distribution:			
$0 to $49,999	Percent	4.4	3.8
$50,000 to $99,999	Percent	8.7	8.8
$100,000 to $249,999	Percent	31.2	26.2
$250,000 to $499,999	Percent	32.6	28.2
$500,000 to $999,999	Percent	18.2	21.2
$1,000,000 to $1,999,999	Percent	3.2	6.5
$2,000,000 and over	Percent	1.7	5.3
Total debt			
Average	Dollars	139,870	226,646
Distribution:			
No debt[a]	Percent	17.3	25.2
$1 to $49,999	Percent	25.2	28.7
$50,000 to $99,999	Percent	18.6	16.8
$100,000 to $249,999	Percent	23.9	17.3
$250,000 to $499,999	Percent	10.4	8.5
$500,000 to $999,999	Percent	3.9	2.5
$999,999 and over	Percent	0.7	1.0
Debt-to-asset ratio			
Average[a]	Percent	33.1	30.6
Distribution:			
No debt	Percent	16.7	21.4
1-40 percent	Percent	45.2	54.3
41-70 percent	Percent	23.4	13.9
71-100+ percent	Percent	14.7	10.4

[a]Percentages differ because of differing numbers of respondents to different questions.

cash farm expenses and depreciation. Net cash farm income does not take into account principal payments or changes in inventory of grain and livestock products during the year. Although net cash farm income averaged $14,897 in North Dakota and $13,095 in Texas, 24 percent of farm operators in North Dakota and about 50 percent of those in Texas experienced negative net cash farm income in 1984.

The total debt and total asset information obtained from the respondents represents a snapshot of the financial picture of North Dakota and Texas farmers and ranchers as of January 1, 1985. Respondents' estimates of the value of their total assets as of January 1, 1985 averaged $423,042 for North Dakota and $909,605 for Texas. Corresponding figures for average debt were $139,870 and $226,646. This translates into total-debt to total-asset ratios of about 33 percent for North Dakota and 31 percent for Texas. That is, the average North Dakota operator was carrying about 33 cents of debt for every dollar of assets he controlled, and the Texas operator 31 cents.

One of the better indicators of the financial health of a farm business is the debt-to-asset ratio. The larger this ratio, the greater the probability that the farmer will experience cash flow difficulties during periods of low returns and high interest rates such as we have witnessed during the 1980s. At current prices, input costs, and asset values, most commercial farms begin to experience difficulty meeting principal repayment commitments at debt-to-asset ratios of about 40 percent [1, 5, 6, 7]. This appears to be particularly true for the cash grain, general livestock, and dairy farms that dominate in the Corn Belt, Great Lakes, and Great Plains states [5]. A more critical point is reached when the debt-to-asset ratio exceeds 70 percent. Above this point, most farms have difficulty meeting even their interest payments and other current expenses. Thus, it appears that many producers with debt-to-asset ratios in the 40 to 70 percent range and most of those with ratios over 70 percent face severe financial pressures.

Examination of Table 1 reveals that 23.4 percent of North Dakota farm operators had debt-to-asset ratios between 40 and 70 percent while 14.7 percent had ratios over 70 percent. Corresponding figures for Texas are 13.9 and 10.4 percent. Thus, about 38 percent of the North Dakota producers and 24 percent of those in Texas had debt-to-asset ratios in the ranges generally associated with considerable financial stress.

In order to assess the relationship between the debt-to-asset ratio and the cash flow situation of North Dakota farm operators in 1984, two simulations were performed using the survey data. In the first simulation, family living expenses were subtracted from total farm family income (i.e., net cash farm income plus all off-farm income). Some farm operators did not provide estimates of family living expenses while others gave estimates which seemed unrealistically low. In order to contend with this problem, minimum levels of family living expenses were estimated based on information obtained through the Farm Financial Analyst Program of the North Dakota Cooperative Extension Service. These minimum levels of family living expenses were $6,000 for a single individual, $8,000 for a two-person household, and $12,000 for a household of three or more. These values were applied in those cases where no estimate of family living

expenses was supplied or where the respondent's estimate was less than these values. This simulation provides a measure of the ability of farm families to meet immediate cash flow needs.[3]

The second simulation consisted of subtracting both family living expenses and principal payments from total farm family income. Principal payments were estimated to be 20 percent of intermediate-term debt plus 5 percent of long-term debt (equivalent to assuming 5-year repayment for outstanding intermediate-term loans and 20-year repayment for long-term loans). This simulation measures the ability of farm families to meet both current expenses and debt repayment demands.

The results of these two simulations are summarized by debt-to-asset ratio categories in Table 2. For farm operators with no debt, about 20 percent appear to be experiencing problems in meeting immediate cash flow needs. The percentage of operators whose total family income is less than their living expenses rises to 36 percent for operators with debt-to-asset ratios in the range of 1 to 40 percent, to 54 percent for those with debt-to-asset ratios of 41 to 70 percent, and to 60 percent for those with debt-to-asset ratios exceeding 70 percent. Considering the entire group of farm operators surveyed, 41 percent had levels of total family income which were insufficient to cover family living expenses.

When principal payments were taken into account (simulation 2), more than half of the operators surveyed had income levels insufficient to cover operating costs, family living expenses, and principal payments (Table 2). Of those with debt-to-asset ratios exceeding 40 percent, more than 80 percent could not cover principal payments in addition to their other expenses. It has been estimated that $375 million would have been needed in North Dakota alone to offset the shortfall experienced by these farm operators in 1984.

Because of the key role of the debt-to-asset ratio as an indicator of financial stress, the next two sections present comparisons of various demographic and employment characteristics of farm families by debt-to-asset ratio categories.

Demographic Characteristics

Selected demographic characteristics of North Dakota farm and ranch operators are summarized by debt-to-asset ratio in Table 3. Examination of Table 3 reveals that the age of the operator and his debt-to-asset

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[3]It should be noted that the simulations reported here are not, strictly speaking, cash flow analyses because depreciation expenses, as well as cash costs, are subtracted in calculating net cash farm income. The conclusion that farm families whose total family income is not adequate to cover family living costs are likely to experience cash flow problems appears to be warranted, however; although depreciation costs can be deferred in the short term, they ultimately must be covered. Further, the analysis presented here is conservative in that it ignores income and social security tax payments.

Table 2--Total Farm Family Income Less Family Living Expenses and Principal Payments by Debt-to-Asset Ratio for North Dakota Farmers

Category	Units	Debt-to-Asset Ratio				Total
		No Debt	1%-40%	41%-70%	71%-100%	
Simulation 1						
Total farm family income less family living expense:						
Average	Dollars	30,023	13,243	701	-5,258	10,102
Distribution:						
Less than -$4,999	Percent	11.6	24.8	38.5	48.4	29.3
-$4,999 to 0	Percent	8.2	11.1	15.1	11.7	11.7
0 to $4,999	Percent	10.2	16.0	13.2	10.2	13.5
$5,000 to $19,999	Percent	25.2	21.0	22.0	21.9	22.1
$20,000 and over	Percent	44.9	27.1	11.2	7.8	23.5
Simulation 2						
Total farm family income less family living expense and principal payments:						
Average	Dollars	30,023	4,909	-19,510	-31,496	-2,075
Distribution:						
Less than -$4,999	Percent	11.6	38.0	72.2	83.6	48.3
-$4,999 to 0	Percent	8.2	13.2	8.3	5.5	9.9
0 to $4,999	Percent	10.2	11.9	7.3	2.3	9.2
$5,000 to $19,999	Percent	25.2	16.7	7.8	7.0	14.7
$20,000 and over	Percent	44.9	20.3	4.4	1.6	18.0

ratio are strongly associated. Of the operators with no debt, 60.5 percent are over 55 years of age, and 82 percent are over 45. On the other hand, 67 percent of those with debt-to-asset ratios over 70 percent are under 45 years of age, and 63 percent of operators with debt-to-asset ratios between 40 and 70 percent are less than 45 years old. A similar relationship is revealed when the debt-to-asset ratio is compared with the year the producer started farming. Of the operators with no debt, about 74 percent began farming before 1965 while about 64 percent of those with debt-to-asset ratios greater than 70 percent began farming after 1969.

Recent surveys of Texas and Ohio farmers suggest that these patterns may be relatively widespread. In Texas, 60.5 percent of operators with no debt were over 55 years of age, and 86 percent were over 45 [10]. In contrast, 44 percent of the operators with debt-to-asset ratios over 70 percent, and 60 percent of those with ratios between 40 and 70 percent were less than 45 years old. Among the Ohio farmers surveyed, half of those who were less than 45 years old reported debt-to-asset ratios exceeding 40 percent [9]. For operators less than 35 years old, the average

Table 3--Selected Demographic Characteristics of North Dakota Farmers by Debt-to-Asset Ratio Categories

Item	Units	Debt-to-Asset Ratio				Total
		No Debt	1%-40%	41%-70%	71%-100%	
Age of respondent:						
Less than 25	Percent	2.7	2.3	3.4	5.4	3.1
25-34	Percent	8.2	17.1	29.3	33.1	20.8
35-44	Percent	6.8	24.8	30.3	28.5	23.6
45-54	Percent	21.8	29.3	24.0	20.0	25.5
55-64	Percent	60.5	26.6	13.0	13.1	27.0
Year started farming:						
1980-84	Percent	4.8	7.5	9.6	16.9	8.9
1975-79	Percent	6.8	11.0	23.6	27.7	15.7
1970-74	Percent	7.5	15.5	15.9	19.2	14.8
1965-69	Percent	6.8	9.5	13.0	9.2	9.8
1955-64	Percent	38.1	23.1	25.0	10.8	20.8
1945-54	Percent	16.3	26.6	10.6	13.1	22.5
Before 1945	Percent	19.7	6.8	2.4	3.1	7.3
Formal education of respondent:						
Did not complete high school	Percent	35.2	24.4	20.5	17.5	24.3
Completed high school	Percent	33.8	38.7	32.7	37.3	36.3
Some postsecondary education	Percent	22.8	24.7	31.2	31.0	26.8
Completed four years or more of college	Percent	8.3	12.2	15.6	14.3	12.7
Formal education of spouse:						
Did not complete high school	Percent	25.2	11.6	8.3	9.3	12.6
Completed high school	Percent	36.1	37.3	36.3	36.1	36.7
Some postsecondary education	Percent	25.1	34.1	39.6	36.1	34.3
Completed four years or more of college	Percent	13.5	17.1	15.9	18.5	16.4
Number of persons in household	Number	2.7	3.5	3.8	3.7	-
Number of children under age 19	Number	0.5	1.3	1.5	1.6	-

debt-to-asset ratio was 56 percent. Clearly, then, the incidence of financial stress is falling more heavily on the younger farmers.[4]

When the education levels of North Dakota farm operators and spouses are categorized by debt-to-asset ratio, it is evident that the more highly leveraged families (who tend to be younger than average) generally have attained higher levels of education (Table 3). For example, 44 percent of North Dakota farm operators with debt-to-asset ratios exceeding 70 percent have some postsecondary education, compared to 31 percent of operators with no debt. Similarly, of the spouses of North Dakota operators with debt-to-asset ratios exceeding 70 percent, about 55 percent have some postsecondary education, compared to 39 percent for the no debt group. In Texas, on the other hand, little relationship between debt-to-asset ratio and educational level appears to exist [10].

A characteristic of prime concern when impacts on such public services as schools are considered is the number of persons per household, and more specifically the number of children per household (Table 3). If farm families from the more highly leveraged groups are forced to leave their rural communities, the reductions in school enrollments could be substantial.

Employment Characteristics

The employment characteristics of farm operators and spouses are of interest in two respects. First, increased earnings from off-farm employment are one means by which farm families can endeavor to supplement inadequate farm income. Second, if they must leave the farm, the extent of off-farm employment experience possessed by the operator and spouse may affect their ease (or difficulty) in making the transition to the nonfarm labor market.

Current off-farm employment of North Dakota farm operators and their spouses is summarized in Table 4. Overall, about 25 percent of the operators were employed off the farm in 1984. An association between off-farm work and the farm's debt-to-asset ratio is obvious; the percentage of operators working off the farm ranges from about 16 percent for farms with no debt to 36 percent for those with debt-to-asset ratios greater than 70 percent. In addition to the operators who worked off the farm in 1984, 9.7 percent of the North Dakota farmers surveyed indicated their intention to seek off-farm employment in 1985. Examination of Table 4 suggests a strong relationship between current financial stress and the desire to obtain off-farm employment--the percentage of operators planning to look for an off-farm job ranged from less than 1 percent of those with no debt to 23 percent of those with debt-to-asset ratios greater than 70 percent.

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[4]It should be noted, however, that approximately one-fourth of North Dakota farm operators in every age category had negative net cash farm incomes in 1984 [7].

Table 4--Selected Employment Characteristics of North Dakota Farm Operators and Spouses by Debt-to-Asset Categories

Item	Units	Debt-to-Asset Ratio				Total
		No Debt	1%-40%	41%-70%	71%-100%	
Operator employed off the farm in 1984	Percent	15.7	22.3	27.9	36.2	24.6
Operator planning to look for off-farm employment in 1985 (not employed in 1984)	Percent	0.8	7.2	14.8	23.0	9.7
Spouse employed off the farm in 1984	Percent	21.0	30.3	34.6	38.0	31.0
Spouse planning to look for off-farm employment in 1985	Percent	1.0	3.9	11.9	16.4	6.8
Number of years operator has worked in a full-time nonfarm job since age 18:						
None	Percent	53.7	45.0	38.2	35.4	43.4
1-3 years	Percent	18.4	24.9	27.5	26.2	24.6
4-6 years	Percent	9.5	13.1	14.0	11.5	12.4
7-10 years	Percent	4.8	7.8	9.2	12.3	8.3
More than 10 years	Percent	13.6	9.3	11.1	14.6	11.3

Similar patterns of off-farm employment were noted for farm operator's spouses. Overall, 31 percent worked off the farm in 1984; this ranged from 21 percent of those with no debt to 38 percent of those with debt-to-asset ratios over 70 percent. In addition, about 7 percent of the spouses not already working planned to seek off-farm jobs in 1985--ranging from 1 percent of those with no debt to 16 percent of those with debt-to-asset ratios over 70 percent.

In considering the possibility that some of these farm operators will be forced to leave the farm and make the transition to nonfarm employment, the extent of their previous experience in full-time nonfarm work may be a meaningful indicator. As shown in Table 4, the experience of North Dakota farm operators in full-time nonfarm work is rather limited; 43 percent of all operators have never worked in a full-time nonfarm job. Among the more highly leveraged groups, the degree of off-farm work experience is greater, but more than 60 percent of the operators in the two most highly leveraged groups have three years or less of nonfarm work experience.

Somewhat similar patterns of association between off-farm employment and farm financial status were observed in Texas. Farm operators and

spouses with high debt-to-asset ratios were more likely to be seeking off-farm jobs in 1985, and spouses from highly leveraged farms were more frequently working off the farm in 1984.

IMPLICATIONS

A continuation of the current farm financial situation will likely require substantial adjustments by both farm operators and their families and by rural communities that are heavily dependent on agriculture. Farm operators have a variety of possible options for dealing with financial stress. Debt restructuring, asset restructuring, increasing income from off-farm work, and enhancing farm income through more efficient management are only some of the alternatives that may prove useful to some operators [2]. For many highly leveraged operators, however, such measures may not be sufficient to allow them to remain in farming. Liquidation of the farm operation and transition to nonfarm employment may be the only viable alternative for these producers.

Farm families that are forced to seek other employment are likely to experience adjustment problems similar to those encountered by workers displaced by manufacturing plant and mine closings [4]. While some of these operators and their spouses probably are already working off the farm, others may have little or no experience in off-farm employment. Further, displaced farm operators may be seeking alternative employment at a time when few new jobs are available in their local areas. Farm families may then be forced to relocate to larger urban areas in their own or other states in search of employment, perhaps only to find that their skills are not highly marketable in urban labor markets. For those farm families, grants, loans, and other programs to cover some of the costs of training, job search, and relocation could be very helpful.

The effect of farm failures on a rural community's private and public sectors will depend in part on (1) whether most farm liquidations represent a net decrease in the number of farms in the area and (2) whether most of the displaced farm families leave the community rather than remain in the local area. In rural areas close to larger urban places, the loss of population base associated with liquidations of commercial farms may be at least partially offset by increases in the number of small, part-time farms. In such areas, then, the current farm financial situation may contribute to an increasingly bimodal size distribution of farms; both large commercial farms and small part-time farms appear generally better equipped to survive than family-scale commercial farms [12]. In areas where commercial farming predominates and there are fewer off-farm job opportunities to support part-time farming, the primary effect of current financial conditions probably will be to accelerate farm consolidation.

Even though an area experiences a substantial decline in farm numbers, its population base could be maintained if other job opportunities could be developed. In fact, displaced farm families generally prefer to remain in the area if adequate job opportunities are available. For example, the North Dakota farm operators surveyed indicated that, if they quit farming, 38 percent would seek a job within the county where the farm was located and 70 percent would prefer to remain in the state. Similarly,

an Iowa study of farmers who quit for financial reasons indicated that 77 percent had remained in the same community, 10 percent were elsewhere in the state, and 13 percent had left the state [11]. Results of a Missouri study reveal a similar pattern [3].

Whether displaced farm families are able to remain in the community or are forced to relocate, however, will depend primarily on the availability of new jobs. In many agriculturally dependent areas, nonfarm job opportunities are likely to be stable or even declining as the impacts of reduced agricultural income are felt by the agribusiness sector and other local trade and service firms. In North Dakota, for example, taxable retail sales (measured in constant dollars) fell 20 percent from 1979 to 1984 while towns under 10,000 population experienced a 31 percent decrease. One reason for the relatively greater impact on the smaller towns is that agribusiness firms, such as farm machinery dealers (which make up a large portion of the retail trade for smaller towns), have been hard hit by low farm prices and incomes. In North Dakota about 80 percent of all farm machinery is sold in towns of 10,000 or fewer people; between 1980 and 1984 total farm machinery sales in the state were cut in half!

Unless alternative job opportunities can be developed, a substantial decline in farm numbers could have significant effects on such public services as primary and secondary schools. The fact that a high percentage of the most highly leveraged farmers are less than 45 years old and have above average numbers of school-age children suggests that the effects on schools could be disproportionately large. For all public services, local officials are likely to be confronted with the necessity of adjusting to the needs of a declining population. Such adjustments are often difficult in the short run, however, because physical facilities have fixed capacities. The need to continue to provide adequate services with a local revenue base that is likely to be static or even declining will lead to even greater needs for careful planning of facilities and service delivery systems. Expanded economic development programs to attract industry to rural areas could not only benefit displaced farmers but also provide support for the economies and service structures of rural communities.

In summary, the policy responses currently being proposed focus on measures to assist financially troubled farmers to remain in farming. Although such measures are obviously needed, they fail to address some key aspects of current farm problems. It is readily apparent that a substantial percentage of farmers simply will not continue to farm. Programs to ease the transition of farmers to alternative employment and to assist rural communities in coping with secondary impacts of agricultural restructuring also should be carefully considered.

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RURAL AMERICA: THE FORGOTTEN ECONOMY
Senator James Abdnor

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OUTLOOK '86



INTRODUCTION

It's a distinct honor and priviledge to have this opportunity to share my views on agriculture with this distinguished audience.

I like to begin my speeches with a note of good news. That good news is that the first session of the 99th congress is coming to a close. I am compelled to add, however, that there are rumors that there will be a second session of the 99th Congress.

I also like to get the audience on my side as fast as possible. I find I get a great outpouring of sympathy from my listeners when I tell them I'm one of those Republican farm state senators up for re-election. I am also a survivor of the Senate Farm Bill debate.

The rural and agricultural economy is the forgotten economy. Economists tell us that two consecutive quarterly declines in real gross national product represents a recession. This staggering economic event has occurred once during the last four years, in the fourth quarter of 1981 and the first quarter of 1982. During this devastating national recession the Congress was ankle deep in the blood and tears shed by its members over the hardships their constituencies were experiencing as a result of that recession.

During recessions government expenditures go up to cushion economic hardships caused by the recession. It's a "one for all, all for one" philosophy of our democracy.

And the congress responded, and the administration responded. Between 1980 and 1983 Federal budget outlays increased 37 percent and the deficit almost tripled. From our common purse, help was provided when and where needed -- higher and longer unemployment benefits, job retraining assistance, job-creating public works projects, food assistance, emergency loans and grants and the list goes on.

There is a comparable recession indicator which measures changes in gross product for the farm sector. Quarterly real gross farm product has declined seven times during the last four years. Technically defined, the farm sector has experienced four recessions in the last four years, by any definition a full-blown depression.

I therefore offer no apologies when I go before the Congress to demand that my part of our national family -- my fellow rural Americans, farmers, and ranchers -- be recognized, appreciated and treated, not as robber barons in bib-overalls, but as citizens. These people have earned their citizenship and with that citizenship comes rights, and among those rights is access to the resources of this great nation during time of desperate economic need.

Many -- perhaps a majority -- of the Congress and certainly the Reagan Administration believe that we cannot allow farm spending to bust the budget. But we have a life or death situation here and you don't pull the plug on a patient to save a little electricity nor do you ask a starving man to fast for world hunger. Let those who have benefitted from our economic recovery come forward and fast for the farmer.

And, I will not take a back seat to any member of Congress when it comes to cutting the deficit. In the 98th Congress I authored legislation which would reduce the deficit over several years, and in a very systematic way. I reintroduced my deficit reduction package this year, too, but my colleagues Senators Gramm and Rudman had a plan as well. I am a strong supporter and sponsor of the Gramm-Rudman bill and I have even gone on public record to cut some very politically sensitive social programs.

It's a matter of establishing one's economic and political priorities, and I'm comfortable and proud of mine.

While I was successful in getting six amendments passed on the Senate farm bill, I'm afriad we didn't get the job done. And if the Senate version is compromised with the House bill in conference, I know we didn't get the job done. If this is the case, our legislative job isn't done either. The United States Senate will revisit farm programs again -- and again, if necessary -- until we're making significant progress in reversing the economic devastation occuring in agriculture and rural America. That's not a threat, it's a promise.

THE POLITICAL SETTING OF RURAL AMERICA

Rural society is an American minority whose condition has become increasingly overlooked. Federal policymakers in Congress and the Administration appear to be ignorant of the major economic and social contribution of rural America to the rest of America and to the world as well, and are insensitive to the needs of its citizenry. If the U.S. intends to remain the world economic and political leader, no longer can we afford to neglect the underutilized and untapped resources of rural America.

The political arena is the battlefield for rural Americans to regain their due recognition, and the Federal government has the duty to protect the rights of all citizens. Just as government action persuaded the correction of racial injustice in the 1960's, it can serve to improve the social and economic injustices occurring in rural America today. Limited access to public services and to the means of commerce, communication, education and health care is the root of rural American discrimination today. Without access, rural Americans are at a disadvantage to 1) participate politically, 2) achieve their potential as an economic force, and 3) share their social and economic contributions with the rest of America.

The current political setting shows the diminishing presence of rural society relative to the Nation as a whole. Only 16 states have more people living in non-metro areas than metro. These states, ranked from most non-metro to least, are: Wyoming, South Dakota, Idaho, Vermont, Montana, Mississippi, North Dakota, Maine, West Virginia, Arkansas, Iowa, Alaska, Kentucky, Nebraska, New Mexico, and Kansas. Four other states have populations that are between 40 and 50 percent nonmetro. They are North Carolina, New Hampshire, Oklahoma, and South Carolina.

The ethnic, racial, economic resource, geographic and climatic diversity of these states makes it difficult for these states to join forces in coalition politics. The population densities vary greatly as well, from four people per square mile in Wyoming to 52 in West Virginia.

In the foreseeable future, rural America will face continuing erosion of numbers in the House of Representatives. Relative population sizes among the states are expected to change with the 1990 census. The Congressional Research Service estimates that 19 seats will be forfeited by 10 states, and another 10 states will receive them. Iowa and Kansas are two non-metro states slated to lose representation.

These power shifts usually are described as Northeastern-to-Sunbelt, but could be viewed just as validly as rural-to-urban. Where New York stands to lose as many as five seats, it is unlikely that the boroughs of New York City will experience dramatic changes in the boundaries of Congressional districts. On the other hand, upstate New York may see districts grow in size by many hundreds of square miles. And on the side of gaining seats, it is most likely that the cities within Florida, Texas, California, and Arizona will benefit from the added representation, not their rural areas.

But despite these odds against rural residents, there is justifiable cause for pronounced representation in the Congress. 49 states have non-metropolitan areas. Only New Jersey does not. And four out of every five counties are classified as non-metro. And non-metro areas comprise 98 percent of the land area of the U.S. It is clear to me that we must learn how to promote and market the merits of rural America. We have to work harder to halt the discrimination against us.

Rural America Is Lagging Behind

The bias against rural America probably was no more intentional than it was abrupt. Rather, rural America is in its economic, social and political struggle today mostly by accident. During the 1960's, rural outmigration was at its peak, but this significant socioeconomic trend received scant attention because of the prominent events of the civil rights movement and the escalation of the Vietnam conflict. Toward the end of the decade and into the 1970's, the "Great Society" programs were underway. Noble as these poverty and development programs were, they tended to "nationalize" Federal assistance activities. By standardizing programs, flexibility to address the diverse nature and unique needs of rural and remote areas was constrained.

In the early 1970's, the rural economy fared well due to agricultural prosperity. However, an embargo put a damper on farm exports in the mid-1970's. Rural America also discovered at this time that its economy no longer was insulated from swings in the national business cycle. The rural economy had broadened its base beyond the agricultural and raw materials industries. Hence, the 1975 U.S. recession caused a slowdown in many rural areas as well as cities. But this interdependence with the U.S. economy works mainly in one direction, though. While the rural economy is affected by changes in U.S. economic performance, the converse is not true: a rural

recession does not appear to have a dampening effect on the overall U.S. economy. Recent history provides the evidence. Vast sections of rural America have yet to participate in the current economic expansion which, in its third year, is the strongest in three decades.

Rural America has been struggling with lackluster performance in both the agricultural and nonagricultural sectors since 1980. The Soviet grain embargo has disrupted U.S. trade relations with most customers, relegating U.S. farmers -- the world's finest food producers -- to the role of residual supplier. Clearly, foreign policy advisors did not intentionally penalize Americans by their actions. But the fact remains they did. Whether by ignorance or faulty reasoning, the State Department in its actions, has had a bias against rural America.

In 1979, the U.S. was on the brink of financial disaster and economic calamity due to uncontrollable hyper-inflation, the plummeting value of the U.S. dollar on international exchange markets, declining capital formation, slumping saving and investment, decreases in worker productivity, and a host of other factors spelling a near-collapse of the domestic economy.

The Federal Reserve System was the first to respond to the impending crisis. Their October, 1979, action to control the money supply was the first positive step toward wrenching inflation out of the economy. Necessary as that action was, the ill-effects of slowing down money supply growth were not evenly spread through the economy, either geographically or by industry. High interest rates crippled firms reliant on credit and stifled the chances for entrepreneurs to start new enterprises. Rural areas have a much greater proportion of self-employed individuals who readily felt this pinch.

Even more dramatic and devastating than historically high interest rates, this abrupt change in monetary policy contributed to the phenomenal, depressing effect on agricultural land values and almost all commodity prices. The rural economy tragically was an unintended victim of a monetary policy action which was necessary to revitalize America. But we have yet to participate in the current cycle of economic growth.

The very brief recovery of 1981 showed that a monetary cure alone was not enough to keep the U.S. economy on its feet. Washington policymakers agreed to provide a fiscal stimulus to augment the desired results of lower inflation. President Reagan's economic recovery plan called for lower tax rates to increase consumer purchasing power and tax incentives to enhance investment. Founded in sound economic rationale, these were necessary steps which ultimately were very successful in reigniting the domestic economy.

But as unintentional or unwitting as it was, rural America again was not a primary beneficiary of this policy action. Since non-metro household income lags 27 percent behind the comparable metropolitan figure, the benefits from uniform tax rate reductions was not as pronounced in rural areas. Rural businesses, struggling from the deep agricultural recession and high interest rates, generally were not in a good position to take advantage of investment and other tax incentives. Consequently, these

fiscal policies had a diminished effect on the rural economy, and Federal planners had no foresight in predicting that result.

Probably no influence on the social and economic structure of America is greater than changes in technology and their effect on consumer choices. The U.S. has entered the so-called "information age" in a big way. Illustrating this transformation is the fact that last year the profit of one single company --IBM -- was greater than the entire U.S. steel industry combined. Other manufacturing industries have attempted to escape extinction by launching into the high-tech era, employing new techniques which have revolutionized the production process. These emerging technologies were more likely spawned in metro areas than in rural, even though there appears to be little inherent advantage favoring any specific location.

This new technology wave has two other effects on rural America. First, technology is bringing the world closer together. Countries are adapting to new customs and products. In just the past two decades, the U.S. has emerged as the international trade giant -- whether bad or good. Lately, I think we've been hurt more than helped by world trade, especially agriculture. In this new global economic setting, rural businesses, especially manufacturers, are as likely to have foreign competitors as they are neighboring rivals.

Second, changing technology and changing consumer demand require continuous and wholesale reevaluation of Federal regulation over business. Several industries have undergone significant change in recent years. Transportation deregulation has remarkable examples of both positive and negative results. Renewed competition has lowered prices and better service in larger cities. But increased competition was not fostered in small cities and rural areas; instead service was curtailed and prices were increased in many cases. Trucking, airline and bus service all are vital to rural America, and I'd be fooling you if I were to say that everything is rosy in truly rural states or in smaller towns throughout the U.S.

Pressure for banking deregulation has been strong for years. In response to consumer interest in a variety of financial services, banks brokerages and insurance companies want to engage in a number of offerings which currently are disallowed. While these changes are most likely to the benefit of consumers and savers alike, advocates of deregulation could strengthen their case by demonstrating that benefits would extend to <u>everyone</u> <u>everywhere</u>. If that were the case, I think support for this deregulation would be forthcoming.

The impact of technology and the need for flexible regulation is very evident in the telecommunications industry. The virtual explosion of new services and new opportunities for technical innovation in comunication made status quo regulation obsolete, unworkable and perhaps even counterproductive. After years of attempting to rework telecommunications rules, sweeping changes were instituted by the Justice Department and the Federal Communications Commission, with the implied consent of the Congress. Many feared that rural America would be devastated by these changes. But fortunately -- so far -- Federal regulators have been responsive to the concerns of rural interests. I do believe the telephone

industry and the Federal government recognize the importance of an extensive national network to all residents and businesses. The battle is not over, however. This issue and all these deregulation issues will require our continued, steadfast attention.

In the backdrop of considerable social, demographic and economic change, the rural political voice has become harder to hear. Since 1920, when urban numbers exceeded rural for the first time in U.S. history, the political agenda has shifted to the urban emphasis. The odds are made worse due to the immense geographic hurdles confronting rural residents. It simply is more difficult for rural citizens to participate in the political process, time- and expense- wise. All of this presents a most challenging dilemma for rural residents struggling to have their views recognized and their rights as American citizens protected despite their minority status.

DISADVANTAGED AND DISCRIMINATED

Two questions focus this investigation into the condition of rural America. Is rural America at a disadvantage relative to the rest of the nation? And, Is rural America being discriminated against, either by design or neglect?

Clearly nonmetro residents are at a disadvantage. Compared to their urban counterparts, incomes are lower, job opportunities since the 1982 recession are dramatically fewer, and the portion of the population that is elderly or impoverished is higher.

Economic growth is the obvious source of improvement of these figures. Through expanded business activity, employment gains and income increases could enance living conditions. In turn, greater economic activity would generate additional tax revenue to assist in social, education, and health care programs. Unfortunately, nonmetro and rural areas are not keeping pace with the economic growth of metropolitan America. And because the rural economic base is smaller than the urban on a per capita basis, a reduced growth rate has resulted in a widening gap in economic performance between metro and nonmetro localities.

The acclaimed "rural renaissance" of the 1970's came to an end about 1978. Since then, nonmetro population and personal income growth has lagged behind metro growth. Nominal nonmetro income growth in the four years 1979-83 was 13 percent lower than metro. Population growth in nonmetro areas outpaced metro areas by nearly 25 percent in the 1970's, but from 1979 to 1983, nonmetro population growth slacked off to just four-fifths of the pace of metro population growth. These trends of slower income and population growth relative to metro continued in 1984 and 1985 to date.

Nonmetro economic growth varies by region as well. New England, Southwest, and Rocky Mountain nonmetro areas actually exceeded the U.S. average metro growth rate between 1979 and 1983. The Plains States'

nonmetro areas fared the worst, with annual personal income growth rates around the 2 percent range, compared to about 9 percent nationwide.

The slowdown in nonmetro performance can be explained largely by the condition of the agricultural and manufacturing sectors of the nonmetro economy. And when the primary industries of a local economy contract, supportive economic activities such as Main Street stores and services and state and local government experience a decline as well. This is evident in smaller towns across the Nation. Adjustments of this nature can be expected for some time to come because little change is expected in agriculture, forestry, mining, and rural manufacturing.

The second question -- whether rural America is being discriminated against -- has both private and public sector implications. Our free market system thrives on information to ensure that competitive forces are at work. Availability of capital resources, business climate, the convenience of easy access to transportation and other services, the regulatory and tax environment, and the habits, skills and productivity of the labor force are among the many factors of interest to business planners and managers. In all of these categories, the characteristics of rural communities must be the best kept secret around. Nonmetro areas are less likely to be encumbered by traffic congestion, infrastructure undercapacity and excessive tax burdens. And the nonmetro workforce is unrivaled in its trainability, productivity and attitudes.

Yet emerging industries typically have not sought out locations outside of metro fringes. Information is costly, and searches for ideal rural locations can be extensive in monetary and time terms. Hence, there is a natural inclination to ignore rural opportunities, even though the potential for rewards from that search are great. This bias against rural areas has impeded the ability of the rural economy to progress.

Public sector discrimination appears at many different levels and in varying degrees. Rural residents face the reality that: 1) Federal programs are geared toward urban priorities; 2) solutions for urban goals will utilize urban resources; and 3) program funding for undertakings not exclusively urban in nature, will tend to favor urban areas.

One would assume that most of the undertakings of the Federal government would accommodate the desired goals of the governed; therefore programs would have an appropriate urban emphasis. If programs are instituted on the basis of public need, however, the results should be comparable for both rural and urban society.

National defense and Social Security are two Federal programs which know no urban/rural boundary. Yet defense contracts tend to be awarded in urban settings. Social Security payments to urban residents tend to be higher than to the rural because urban wage bases are higher in general. And the argument has been raised that rural areas have a higher proportion of elderly ineligible for benefits because they did not participate in the program. To the extent that Social Security benefits are an entitlement

far in excess of contributions by recipients, the ineligible are denied the windfall.

Other spending programs also have an obvious urban leaning. Federal research and development contracts, high tech applications research and educational grants, for example, tend to be concentrated in metropolitan centers. Job retraining programs are located in cities, as are most Federal agencies. And when fiscal constraints mandate the streamlining of branch offices, rural doors are among the first to close. Many disadvantaged residents are forced to travel vast distances at great expense to have their problems addressed. City residents not only are in closer proximity to these offices, but also have access to public transportation to get there.

Even Federal projects designed to serve rural America do not give their undivided attention to the cause. Here are some striking examples:

* Though 28 percent of the population resides in nonmetro areas, only 21 percent of the total farm and rural development funding, 13 percent of housing and credit assistance, 12 percent of the Urban Development Action Grants and an even smaller portion of Community Development Block grants find their way to rural areas.

* Rural areas have 55 percent of the total road-miles under the Federal highway aid network, but receive only one-third of the funding.

* Despite high levels of unemployment and discouraged workers and even higher levels of underemployed (laborers who accept jobs below their skills or below their deserved wage), only 13 percent of training and employment program funding goes to nonmetro areas.

Tragically -- just as analysts are becoming cognizant of rural problems -- the best evidence of rural hardship in recent years has been lost. Because of spending cuts in Federal statistics, survey and data collection programs, socioeconomic and demographic information on rural America is incomplete at a time it was needed most. Because of the inherent urban bias in the Federal Government and the expenses related to rural sampling and data collection, rural America was stripped of its opportunity to prepare an ironclad case in its defense. But a convincing argument can be made to policymakers with the evidence that is available. And in the rural-spawned spirit and tradition that made America great, rural citizens are not asking for a handout, just a fair shake.

The stereotyped description of rural America no longer is an adequate representation. Technology and other market forces are changing the face of small communities and the way rural areas interact with the rest of the economy. No longer is rural America insulated from macroeconomic factors such as inflation, interest rates, the value of the dollar in foreign exchange, U.S. competitiveness and foreign trade.

The human and natural resources of rural America offer both opportunities and challenges, requiring policymakers to redefine economic development goals for the future. This is not a nostalgic desire to maintain the status quo. Clearly, agriculture and other natural resource and raw materials industries alone cannot support a growing rural population. The industrial bases of rural communities must expand and diversify to accommodate the changing demands of an increasingly technology- and information-based society. Rural America must adapt to the new U.S. and world economies or face an economic identity crisis for years to come. Congress must renew its commitment and support to the rural economy.

RURAL AMERICAN PRINCIPLES

While policies and programs may be debated extensively, principles cannot. As part of rural revitalization, sound social and economic values must lay the foundation on which successful policies can be launched. Basic principles do not change with changing times, a dynamic society, and an expanding and evermore interdependent global economy. Rather, they implicitly are the flexible and adaptive guidelines which keep policymakers on track.

Today, I wish to make a Declaration of Rural Interdependence. This is a call to recognize and stand by rural Americans during a time of crisis. Rural Americans are falling farther behind their fellow citizens in the advances enjoyed by others in our Nation. Rural Americans have not been blessed by an economic recovery.

Rural people, households, farms, other rural businesses, and communities do not seek handouts or leftovers. They seek only their rightful status as full participants in national affairs. What happens to them has national and international consequences.

Unless special problems and crises of rural Americans are resolved, we shall lose the luxury of being able to deal with many problems directly experienced by others. As stated by sociologists Don Dillman and Daryl Hobbs:

> What happens in rural America is of concern to all Americans. In our highly interdependent society, rural problems quickly become urban problems and vice versa. Neither the urban nor rural portions of our society can flourish for long while the other languishes behind. Satisfying the needs of all Americans will require that many rural-based problems be solved during the remainder of this century.

In my opinion, there must be a recommitment to basic American values. Here are four that have been ignored for too long.

1. There must be a renewed commitment to rural America as human and natural resource bases for generations now and to come.

2. The positive contributions of rural America, as an integral part of the national economy, must be recognized and appreciated by Federal policymakers and all Americans.

3. Opportunities and equal rights for all rural people are as important as those of their urban counterparts.

4. There must be a renewed commitment to the American heritage of family-owned and operated farms as the cornerstone of our Nation's agricultural structure -- the proven and reliable provider of food and fiber at low cost for ourselves and international humanity.

Conclusion

What can be done to offset this trend of weakening political and economic clout? How can rural America keep pace with the changes taking place internally, domestically and globally? Can rural communities adapt to a new economic environment and yet preserve their heritage and lifestyles?

Answers will not come readily nor will any policy remedies produce immediate results. Rural America is in a demographic and economic transition, the outcome of which is unknown. The stakes are high. A vital component and the very origin of America's strength and prosperity may be lost and the consequential burden that outmigration would place on cities is grave. Yet the solution seems to be so simple. If rural residents were just given economic opportunity -- a fair shake -- the problem would cease to exist.

Even before policy objectives and options can be discussed, debated, compromised and implemented, an enormous task must be undertaken. Along with a renewed national commitment must come an awareness and education process. Faulty policies and dismal results indicate that policymakers do not even have a basic understanding of what rural America is, let alone how it ticks. These myths and misconstrued notions must be destroyed or else public policy is doomed to failure. To correct this identity problem, the following steps should be taken, or if they're on the books already, then let's reactivate them and take them seriously:

1. Establish a National Rural Commission. To ensure that the Congress and Administration acknowledge that rural America is in need of attention, an advisory task force should be created. Its agenda should be 1) an assessment of the nonagricultural and farm economies and the social structure of rural America, 2) an analysis of the effect of Federal policies -- rural and nonrural alike -- on rural America, and 3) recommendations for future rural policies.

2. Establish a National Rural Data and Research Center. While land grant Experiment Stations, the Extension Service and Small Business Development Centers are among many public and private institutions

engaged in active programs, there is a lack of national focus to rural and agricultural issues. Such a center could serve to gather, analyze, and disseminate rural information and provide a forum for voicing policy issues.

3. Improve Data Collection. A Congressional mandate could require Census Bureau, the Bureau of Labor Statistics and the Department of Agriculture to identify and correct its flaws in rural statistics gathering and reporting, and to improve and add more emphasis to its analysis of this data. Also lacking presently are presentations of the interdependence between the rural and urban sectors.

4. Institute Departmental Reviews. If all administrative agencies were required to conduct annual assessments of their rural missions, problems could be identified and corrected much easier.

5. Restructure the Department of Agriculture. Seven out of ten jobs in rural America are now non-agricultural. To reflect changes in the rural economy, USDA should expand its mission. Given the urban bias of the Departments of Health and Human Services, Housing and Urban Development and Labor in particular, the role as rural watchdog appears to belong to USDA. Likewise the responsibility of most social and economic development programs falls squarely on the shoulders of USDA. Much of USDA's research and information system is enacted via the land grant and public university system which has a mission to serve both rural and farm people. Renamed "The Department of Agriculture and Rural Development" and undertaking what the name implies, this agency could ensure that rural citizens are not given leftovers from the table of urban programs.

Implementing these recommendations is a precondition to any policy initiatives to revitalize rural America. Once the American public and Federal policymakers are enlightened, new and innovative approaches are inevitable. It is not the scope of this paper to outline specific policy recommendations in all facets of rural, social, and economic life. Rather, its purpose is to challenge the Congress, Administration, and the public to rethink rural America.

The rural economy's connection to the rest of the U.S. economy -- and the world economy for that matter -- presents a big challenge. The domestic economy is transforming from a manufacturing base to services. In addition, the emergence of the information sector as a growing and even dominant economic force is altering the way Americans work and live. In this setting, the rural economy is facing an identity crisis of sorts.

It is apparent that agriculture, forestry, mining, and other activities involving raw materials, which comprise much of the rural economy, are a shrinking portion of total U.S. economic activity and no longer can sustain the rural economic base and labor force. Without adding labor and product value to raw materials, rural areas may not be able to sustain economic viability and to overcome deficiencies.

However defeatist that may sound, it need not spell doom for seemingly economically obsolete communities. A changing and dynamic economy creates

a steady stream of new opportunities. Combining new technologies such as computers and telecommunications can result in new, close links between rural and urban settings, and new jobs for rural residents. An excellent example of successful technical adaptation was a recent transfer of credit card operations of a major U.S. bank from New York to South Dakota. The bank experienced such impressive productivity gains from their new employees that the facility has been expanded and activities diversified. Other service industries and rural states also could take advantage of using new technology to produce positive and profitable ventures. Rural America must become a better advertiser of its offerings.

Rural areas no longer are immune from swings in the business cycle or other macroeconomic changes. Deregulation of major industries such as transportation and banking also subjected rural areas to abrupt changes in market conditions. The effect of huge Federal deficits on interest rates and exchange rates is felt by farmers and rural businesses. Budget cuts can fall disproportionately on rural residents whose political influence base is diminishing. Coupled with federalism, many State and local governments are saddled with increased responsibilities and reduced resources to accomplish public goals. These are but a few of the changing macroeconomic factors which have an impact on rural areas.

This description of lagging income, slower or even negative population growth, lackluster employment opportunities, and the need for a new economic identity reveals a challenging horizon for rural America.

Economic development requires an accompanying complement of public and private services, such as infrastructure, education, health care, varietal retail commerce, leisure time pursuits, and provision of a host of other business and household needs. Rural areas typically possess the resources and manpower to satisfy or exceed those requirements, all in a setting conducive to safe, secure, and quality living.

The absence of economic recovery in agriculture and other rural industries raises many public policy questions. The evidence is very strong that, while traditional Federal programs and approaches to counter economic recession in the agricultural sector may have worked in the past, they have been clearly ineffective in recent times. Public policy has failed to recognize, let alone keep pace with, the structural and economic evolution of agriculture. The public sector, as well as the private sector, needs to consider new approaches to the economic problems and opportunities presented by the rural environment.

WEATHER AND CROP PROSPECTS - 1986

OUTLOOK '86

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Environmental factors play a major role in determining crop development and yield. Agricultural areas around the world are vulnerable to weather's erratic behavior, but the impact on final yield output is largely determined by the type of weather which occurs during key stages of the crop's growth cycle. In retrospect, the 1985 growing season was no exception, as weather events in several major agricultural areas played an important role in determining crop yields.

In the United States, unseasonably warm weather early in the spring allowed corn, soybean, cotton, and spring wheat planting to progress ahead of their normal pace and well ahead of 1984's slow pace. The early spring pushed crop development ahead of normal, and crop progress remained ahead of normal during much of the growing season. In spring wheat areas of the northern Great Plains, the crop emerged in good condition with ample moisture. However, persistent dryness from mid-June through July, particularly in Montana and the extreme western section of North Dakota, reduced yield prospects as spring wheat advanced through the critical reproductive stage. Planting of the 1985 corn crop occurred with favorable moisture conditions in most areas. However, farmers in the southeast had to replant corn due to dryness. The crop emerged in good condition through much of the Corn Belt. Timely rains during the growing season combined with available soil moisture to meet crop moisture needs, contributing to a record national corn yield of 116.6 bushels per acre (based on November 12 estimates). This yield is about 9 percent above last year's crop and 3 percent above the previous record set in 1982.

In Canada, sufficient planting moisture was available for spring grains in most of the Prairie Provinces and crops emerged in good to excellent condition. However, a drying trend which began in early June in southern Alberta and southwestern Saskatchewan persisted through much of the growing season, lowering spring grain yield prospects for the second consecutive year. Furthermore, the unseasonably cool, wet August and September weather in the southeastern Prairies caused extensive harvest delays and lowered the quality of grains. Overall, untimely weather events plagued crop development in the Prairies grain belt during the 1985 season.

In the USSR, winter wheat broke dormancy in spring 1985 with less-than-favorable moisture supplies for vigorous vegetative growth. However, timely rains in mid-May were beneficial for the crop in the reproductive stage. Spring grain planting west of the Ural mountains occurred with favorable moisture conditions. Above-normal precipitation in June and July benefited crops in the reproductive and filling stages.

In spring grain areas east of the Ural mountains, topsoil moisture in most areas was very good for spring crop emergence and early growth. In June, unseasonably dry weather in spring grain areas in the southern Urals and western Kazakhstan was accompanied by periods of hot weather, which reduced yield prospects for crops in the heading stage. Wet weather in early July in these areas halted any further declines in the yield potential. In general, prospects for the 1985 total grain crop improved from the previous year with generally more favorable weather conditions.

In India, the late arrival of the southwest monsoon delayed planting of cotton and groundnuts in Karnataka, Andhra Pradesh, Maharashtra, western Madhya Pradesh, and eastern Gujarat. Once the monsoon arrived, the rainfall pattern was erratic, with below-normal precipitation falling on most areas. As a result, some yield losses were realized particularly in Gujarat, Maharashtra, Karnataka and western Madhya Pradesh where rainfall was below normal during the critical repoductive period. This past year's weather in cotton and groundnut areas of India was quite similar to the 1982 growing season.

Autumn harvests are nearing completion in major Northern Hemisphere agricultural areas, and attention is now focused on next year's crops. Winter grain sowing is nearing completion in most areas, and adequate soil moisture accompanied by seasonable temperatures is needed for proper crop germination, emergence, and establishment. Also, pre-season precipitation is needed to recharge soil moisture supplies for next spring's planting season. In the Southern Hemisphere, summer crop planting is taking place in South America, southern Africa, and Australia, and adequate soil moisture is needed for proper emergence and early establishment. These factors, which are important determinants for next year's yield prospects, serve as initial indicators for the 1986 outlook.

A summary of moisture conditions for both national and international crop areas follows. Figure 1 highlights the agricultural weather situation for Northern Hemisphere winter grains and Southern Hemisphere crops to be harvested in the next several months.

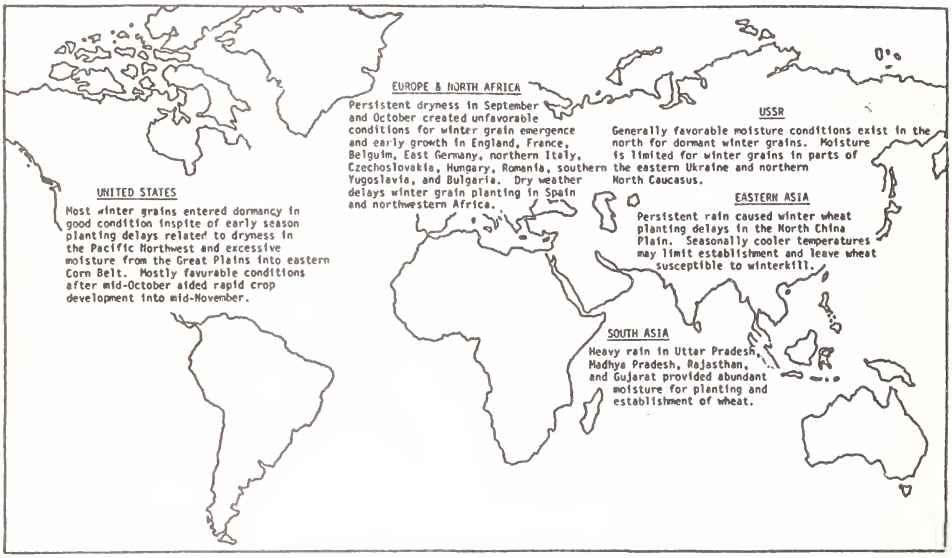
National Situation

Winter Wheat: Persistent showers delayed winter wheat planting from the northern Rockies, across the Great Plains and into the Corn Belt during October. Some reseeding of the crop was necessary in Oklahoma and eastern Kansas due to heavy rains which washed out seeds and young stands. In late October and early November, winter wheat planting progressed rapidly, especially in the central and northern Plains where the weather was dry. As of November 17, 1985 most states reported planting progress which was at, or ahead of both last year and the normal pace. Exceptions were Georgia, Missouri, and Texas where seeding lagged behind the normal pace. In most crop areas, winter wheat has emerged in good condition, with the crop reported as excellent in Kansas. In most major winter wheat areas, adequate to abundant moisture provides an optimistic outlook for the 1986 winter wheat crop. Snowfall preceded recent bitter cold over winter wheat areas in the northern Great Plains and the Pacific Northwest, protecting stands of newly emerged wheat. However, the cold weather halted the emergence of late planted wheat.

WORLD AGRICULTURAL WEATHER HIGHLIGHTS

NOVEMBER 19, 1985

NORTHERN HEMISPHERE



SOUTHERN HEMISPHERE

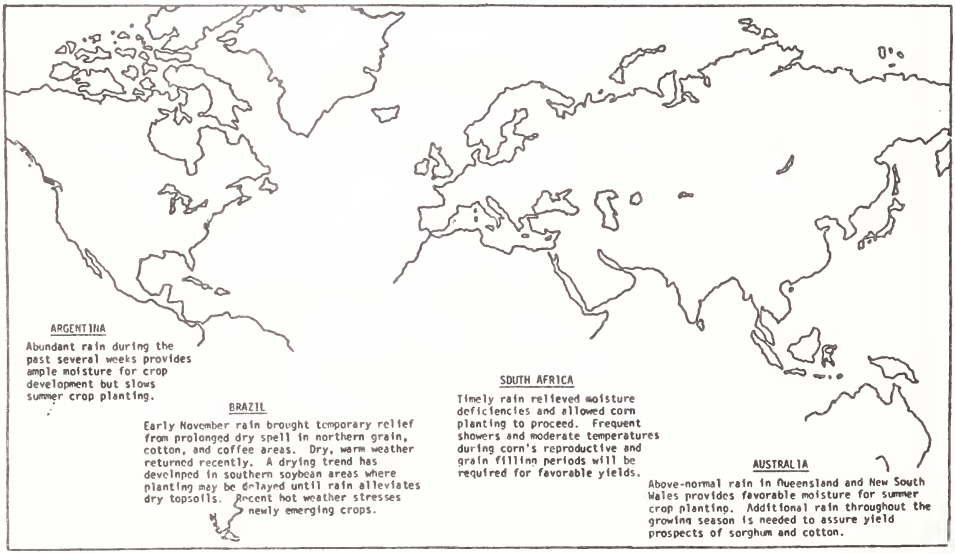


Figure 1. World Agricultural Weather Highlights.

Spring Wheat: Above-normal October rains in the northern Great Plains, particularly northern Montana, North Dakota, and parts of South Dakota increased subsoil moisture recharge at the end of the growing season. These reserves should provide a good start to next year's growing season, leading to early indications of a favorable outlook for spring wheat. Early November snow added to the potential soil moisture recharge.

Corn,Soybeans,Cotton: October's wet weather throughout much of the Corn Belt, Delta, and the Southeast continued through early November. The damp weather in the Corn Belt caused delays in corn and soybean harvesting, particularly in Missouri, Iowa, and South Dakota. Significant soybean harvest delays in the Delta and the Southeast were caused by torrential rains from hurricane Juan in late October. Some delays in cotton harvesting also occurred in these areas; however somewhat early maturity partially offset these delays. As of November 17, corn harvest progress was 78 percent compared with 86 percent last year and the 90 percent average. Soybean harvest progress was 81 percent, ahead of last year but behind the normal. Above normal October rainfall throughout the Corn Belt, Delta, southern Great Plains and the Southeast aided soil moisture recharge. Thus, early prospects are good for the beginning of next year's crop season in these areas.

The long-term Palmer Drought Index, as of November 2, 1985 summarizes the current moisture situation (Figure 2). The Index changes slowly from week to week and reflects the general long-term status of water supplies. Moist conditions throughout the Great Plains, middle Mississippi Valley, and the Delta will provide adequate subsoil moisture supplies next spring.

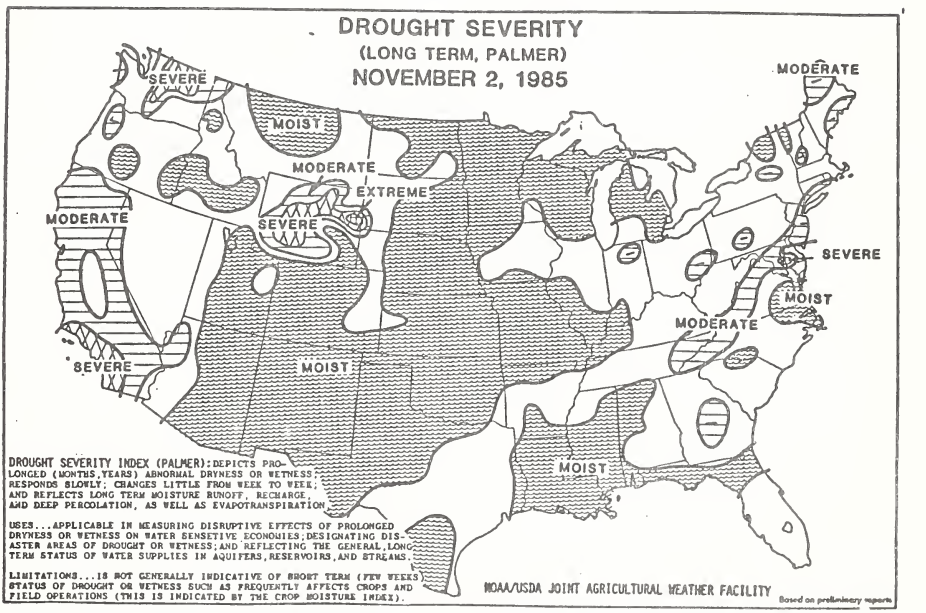


Figure 2. Drought Severity Index for November 2, 1985.

Limited moisture conditions exist in parts of the Ohio Valley and the Atlantic Coast States, where timely winter and spring precipitation will play an important role in the yield potential. However, recent heavy rain will improve the moisture reserves in these areas as well.

International Situation

Europe: September and October are the normal planting months for winter grains over most of Europe. Figure 3 depicts the areal coverage of percent of normal precipitation for September through October for most European winter wheat areas. Most crop areas received below-normal precipitation during the period, except in the extreme southern tip of Italy and central Yugoslavia where precipitation was above normal. Winter wheat areas in the eastern United Kingdom, the southern two-thirds of France, southwestern East Germany, southern Yugoslavia, and southeastern Romania had much below normal rainfall (less than 25 percent of normal).

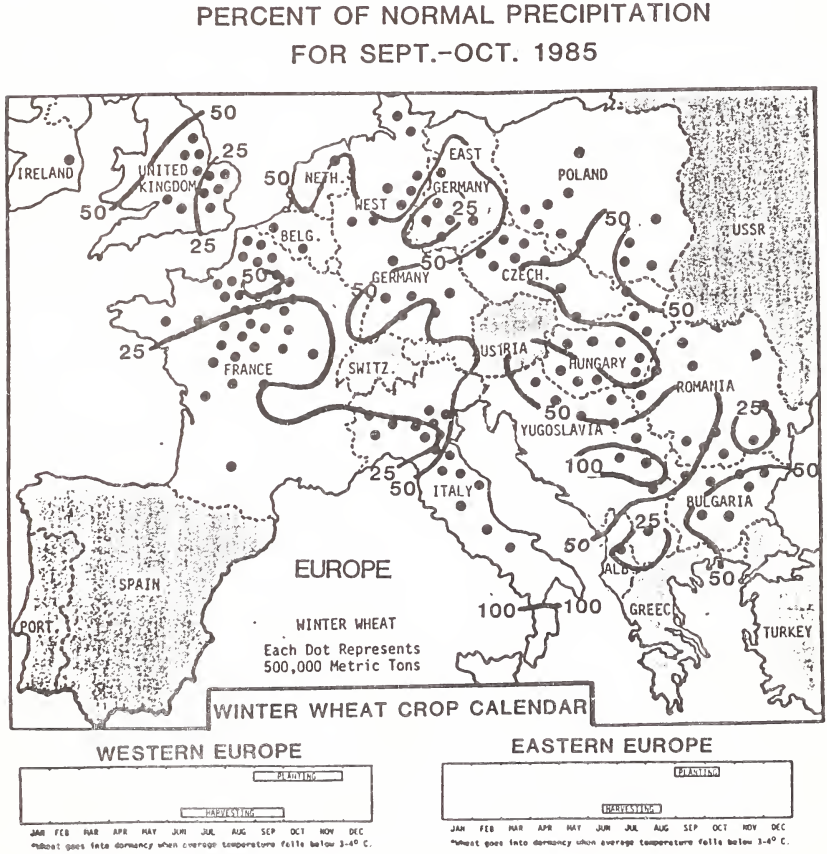


Figure 3. Percent of Normal Precipitation (Sept-Oct 1985) for Europe.

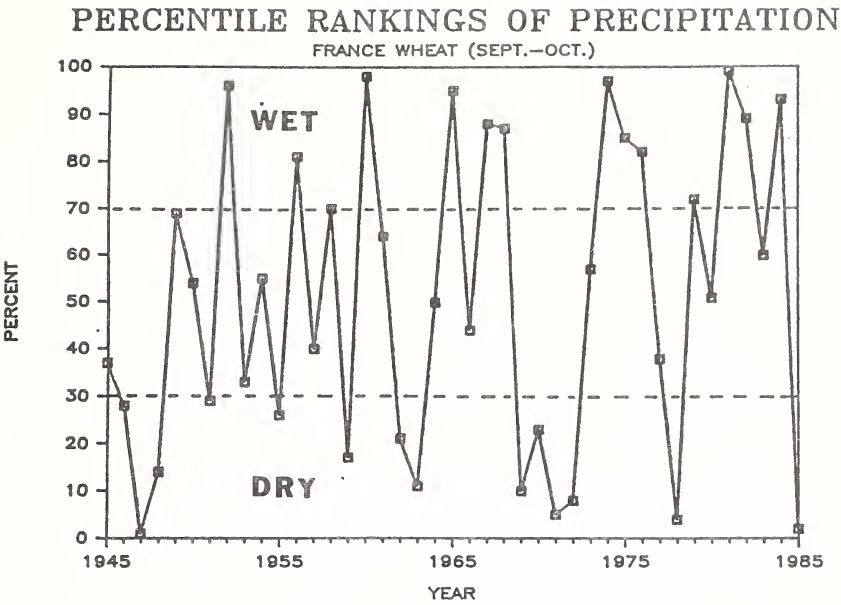


Figure 4. Percentile Rankings of Precipitation for France Wheat Areas (Sept-Oct).

The chronic dryness in these areas created the likelihood for spotty seed germination and poor early establishment. Unfavorable planting moisture (25 to 50 percent of normal rainfall) also covered parts of the United Kingdom, northern France, central West Germany, eastern Czechoslovakia, parts of Hungary, Yugoslavia, Romania, and Bulgaria. In Figure 4, percentile rankings of total monthly rainfall for September and October for an average of 3 stations in the major wheat area of northern France is presented. A total of 112 years of rainfall data were used in the analysis. Only the years from 1945 to 1985 were plotted. The results show that precipitation in the wheat area was ranked in the 2nd percentile in 1985, depicting the well-below-normal rainfall in these areas. Precipitation for September and October, 1985 was the lowest since 1947. In fact, rainfall during these two months in 1985 was the second lowest since 1874. In early November, showers returned to many European crop areas, improving moisture conditions, but wintry weather halted crop growth. Favorable temperatures and additional precipitation will be needed prior to winter dormancy for winter grains in many areas. Normally, winter grains enter dormancy by late November in northern and eastern Europe, and in early December in England, northern France, Yugoslavia, and Italy's Po Valley. Winter grain planting in Spain was delayed due to dryness, but recent showers increased planting moisture. At present, the outlook for winter grains in Europe is poor. Favorable overwintering conditions and timely spring rains will be needed to ensure favorable yield prospects for winter grain crops.

USSR: Timely moisture during key growth stages of many crops boosted the 1985/86 crop yield potential above those of the past 6 years. Autumn 1985 weather conditions for winter grains in northern crop areas of Western USSR were mostly favorable for emergence and early growth. Winter grains entered dormancy at near-normal dates in good condition. In the south, soaking rains in early September provided favorable moisture conditions for early winter grain planting. However, precipitation from early September through October was below normal, particularly in parts of the eastern Ukraine and the northern North Caucasus, where October's rainfall was less than 25 percent of normal. October's generally dry weather in these areas created limited moisture conditions for winter grain planting, especially that portion of the crop which was planted in early October. Historically, these areas account for about 20 percent of total winter wheat production. Early November showers improved moisture conditions in many areas as unseasonably warm temperatures allowed winter grains to add on autumn growth. Winter grains entered dormancy by mid-November in most areas. In spite of dryness in some areas, overall autumn weather conditions up to the present have been favorable for winter grain establishment, providing a helpful start for next year's growing season. However, favorable overwintering conditions and timely spring rains will be needed to maintain this optimism.

South Asia: Heavy rain in northern India covered major wheat producing areas. Abundant moisture exists for wheat establishment in Uttar Pradesh, Madhya Pradesh, Gujarat, and Rajasthan. Wheat normally progresses into the moisture-sensitive reproductive stage in January, coinciding with a minor rainy season across the northern wheat belt. Much of India's wheat is irrigated but additional moisture would benefit yield prospects.

China: Above-normal rain in October delayed winter wheat planting and summer crop harvesting. Cotton quality has likely been reduced by persistent wetness in Anhui and Jiangsu. Seasonally cooler temperatures may limit establishment of late planted winter wheat in Henan, the major wheat producing province. A period of gradual cooling is needed for establishment and sufficient hardening so that wheat will be less susceptible to winterkill. Moisture is generally favorable for winter wheat establishment in Hebei and Shandong. Winter wheat normally breaks dormancy in early March in the North China Plain and spring rains would benefit the crop following the usually dry winter.

Argentina: Frequent rain during October and early November provided ample moisture for wheat, which advanced through reproduction and grain filling during the period. Soil moisture is also abundant for early summer crop development. However, wet field conditions have recently slowed planting of corn, sorghum and sunflowers. Recent reports indicate that flooding has occurred primarily in grazing areas of Buenos Aires. Drier weather is needed for winter wheat harvesting and to complete coarse grain and oilseed planting. Soybean planting is just beginning throughout Argentina's major producing area of Santa Fe and northern Buenos Aires.

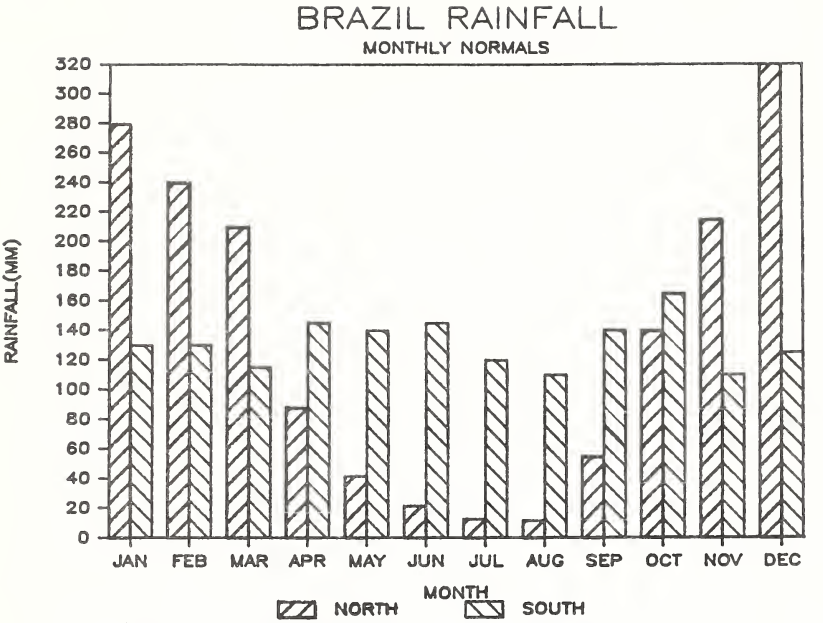


Figure 5. Monthly Normal Rainfall Distribution for Brazil's Northern and Southern Soybean Areas.

Brazil: The normal monthly rainfall distribution for Brazil's northern and southern soybean area is shown in Figure 5. The normal June-August dry season (June-August) in the highly diversified crop area of Minas Gerais, Sao Paulo and surrounding states (north) turned into a 5-month drought as much-below-average September and October rainfall hurt agricultural activities. Coffee tree flowering was severely stressed, and corn and cotton planting was delayed. Early November rain broke the long dry spell, bringing temporary relief to the drought-stricken area. The ideal corn and cotton planting period had already passed, but soybean planting normally extends into early December. Dry weather returned to the region after the first week in November. A drying trend has developed in Brazil's southern soybean areas of Rio Grande do Sul since late September. Moisture has been rapidly depleted in early November with hot weather pushing maximum temperatures into the 90's and above 100F. Rain will be needed soon in all areas to stimulate planting of soybeans and other summer crops and to sustain crop development. Present dry soils will require frequent, timely rains to improve crop prospects in the major crop areas of Brazil's center-south, especially during January and February when crops advance through more weather-sensitive growth phases.

Australia: Moisture is favorable for summer crop planting and early growth in southeastern Queensland and northern New South Wales. Additional rainfall will be required as moisture demands of cotton and sorghum increase during the reproductive cycle. Rainfall normally increases in these regions during the summer.

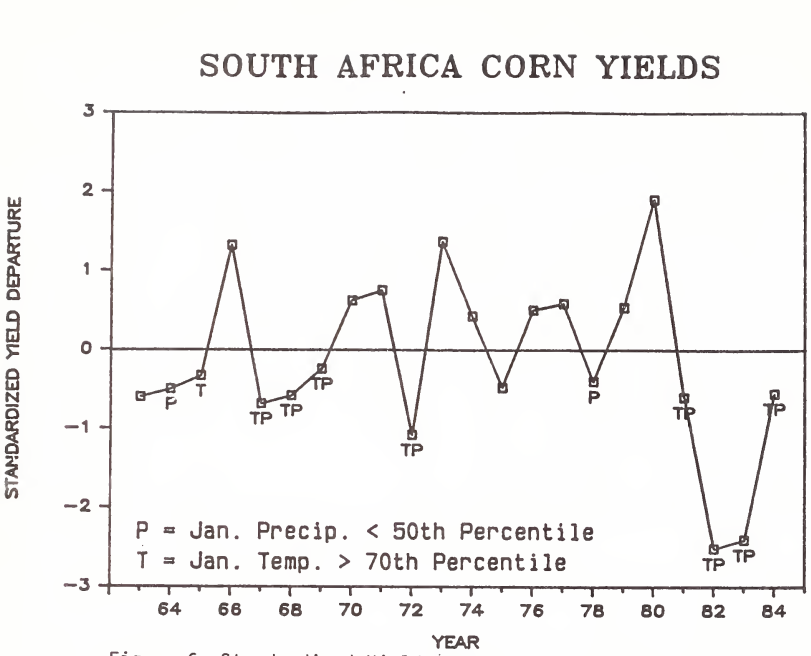


Figure 6. Standardized Yield Departures for South Africa Corn (1963-1984).

South Africa: Below-normal rainfall and above-normal temperatures during most of October slowed planting in the Maize Triangle. However, widespread, heavy rain in late October and early November greatly improved planting conditions. The optimum time for corn planting in eastern corn areas is early November. Moisture is adequate in western corn areas where planting can continue into early December. Thus far, yield prospects for the South Africa corn crop remain favorable. In Figure 6, standardized yield departures from trend are plotted for South Africa corn for 1963 to 1984. Negative yield departures indicate below-trend yields while positive departures reflect years with above-trend yields. A zero departure is one where the yield value is equal to the trend. Also, percentile rankings of January monthly average temperature and precipitation were computed for 1951 through 1984. For years when January precipitation falls below the 50th percentile and/or January temperatures are above the 70th percentile, a respective P or T is placed next to the standardized yield departure value which corresponds with that same year. From Figure 6, a relationship can be observed between hot, dry January weather and corn yields. On most years when the standardized yield departures are negative, hot and/or dry weather occurred during January. Therefore, although current conditions point towards a generally favorable outlook for the 1986 South Africa corn crop, the weather during January, which is normally the critical reproductive period for corn, will be very important in determining yield prospects.

METEOROLOGICAL DATA FOR AGRICULTURAL APPLICATIONS
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1. Introduction

Recently, there has been an increasing requirement for specially processed weather information to aid the assessment of global crop conditions. This information focuses on weekly, monthly, or seasonally summarized or averaged values of certain important variables, such as precipitation and temperature. Of further importance are the deviations from normal values, used to facilitate recognition of anomalous weather events. A significant step toward producing and delivering this information in a timely manner and to a wide spectrum of users was taken with the formation of the Joint Agricultural Weather Facility (JAWF) in 1978. This cooperative organization is staffed with personnel from the National Oceanic Atmospheric Administration (NOAA), Climate Analysis Center (CAC), which is part of the National Meteorological Center, and the U.S. Department of Agriculture (USDA), World Agricultural Outlook Board (WAOB). The JAWF has responsibility for providing meteorological assessments (a CAC responsibility) as well as the impact of any anomalous conditions on world wide agriculture (a function of the the WAOB). All weather and crop evaluations are passed onto interested agriculturalists by teletype, special computer communications systems, the Weekly Weather and Crop Bulletin (JAWF, 1985) and also through special briefings, press releases and government reports.

The global weather observations used by the JAWF are provided by the many nations that participate in the Global Observing System (GOS). This system has been monitored for over 30 years by the World Meteorological Organization (WMO), a specialized agency of the United Nations (WMO, 1977). The WMO was created to provide expert guidance to the world community in a number of important areas, including:

- establishing networks of stations and centers to provide meteorological and hydrological services and observations.
- establishing and maintaining systems for the rapid exchange of meteorological information.
- standardizing the methods for taking and communicating meteorological and related observations
- applying meteorology to aviation, shipping, water problems, agriculture and other human activities.
- fostering cooperation between meteorological and hydrological services.
- encouraging research and training in meteorology and, as appropriate, in related fields.

Through the continuing efforts of the WMO, the GOS has continually increased in effectiveness and now produces many thousands of observations every day. It has been recognized that delivering these data to users is an

important adjunct to the observing system. This has led to the continued improvement of the Global Telecommunications System (GTS), which has the capability of delivering coded observational messages to nearly any location within a few hours (WMO, 1974).

Many different uses are presently made of the surface and upper air reports provided by the GOS and transmitted via the GTS. Of prime importance is the use for regular operation of computerized global and regional weather forecast models. Another specialized application is in support of agriculture. Surface observations are the vital input for agricultural applications and can be specially processed and summarized to allow nearly continuous monitoring of important meteorological conditions.

The observations of the present GOS form the backbone for the monitoring of global surface weather. Until recently these observations were taken entirely with conventional types of instruments; for example, thermometers, precipitation gauges, anemometers, etc. However, many new types of observational instruments are in advanced stages of development. A number of these new instruments are associated with satellites and data from some are now beginning to have an impact on meteorological operations. It can be expected that this impact will increase so that the future GOS may change considerably in character with time.

2. Observations from the Global Observing System (GOS)

The GOS is a remarkable international cooperative effort. Included in the system are nearly 10,000 manned stations capable of reporting the state of surface conditions at least four times per day. Additionally, an 800 station upper-air network using balloon borne radiosondes is also a part of the GOS. A view of the surface station locations is given in Figure 1. Some areas are heavily populated with stations, but areas of sparse coverage can also be noted, especially in sections of drought prone Africa.

Methods of observing surface weather conditions follow international standardized procedures which have been developed over the years. For example, surface observations are normally taken at 0000, 0600, 1200, and 1800 Greenwich Mean Time (GMT) in order that consistent global analyses can be derived. It should be noted that some stations may also take observations at 3 hour intervals and other stations, supporting aviation, may observe as often as every hour. Data from observations are converted into an international code for electronic distribution throughout the world.

A major reason for the success of the GOS over the years has been the fact that a relatively large regional data base is required to insure forecasting capabilities. In many cases, data from other countries are also needed for this purpose. Additionally, even though some climatological investigations can be based solely on observations made within a single country, many studies also require reports from other countries. Here again, the international exchange is vital.

The full operational surface network for the United States is shown in Figure 2. There are about 700 stations which report all of the required



Figure 1. Global Synoptic Surface Observing System.



Figure 2. Full operational surface network for the United States (approx. 700 stations).

surface information. Of these, about 240 are dedicated to the WMO/GOS and are operated by the National Weather Service. Most of the others are operated by the Federal Aviation Administration, primarily in support of aviation.

Although the U.S. synoptic network satisfies many of the meteorological needs, it is hardly sufficient for local agricultural and hydrological requirements. For these purposes, it is advantageous to enhance the density of the data base with timely reports, available on a regular basis from special regional and state networks. For example, a vast increase in observational coverage (Figure 3) can be realized by utilizing reports available from the River Forecast Center (RFC) Cooperative Observer Network. Although data reported by the RFC network (precipitation, snow cover and temperature) are keyed primarily to watersheds, such coverage can satisfy other users, including those producing agricultural evaluations. An even further enhancement could be realized with the addition of many more observations from an additional number of special networks. However, data from most of these other networks are not electronically communicated beyond specified areas, but are made available on an after the fact basis from the files of the National Climatic Data Center. A continuing effort is being directed towards making as many of the special reports as possible available for immediate operational use.

3. The Global Telecommunication System (GTS)

For many uses, meteorological data are quite perishable. Thus, the GTS was organized through international agreements to accommodate large volumes of reports within stringent time limitations. The GTS was built on national telecommunication networks which had already existed. Regional Hubs and a Main Trunk circuit were added to the national systems for rapid dissemination of information to any global location. The Main Trunk circuit shown in Figure 4 allows data to be routed in any direction in the Northern Hemisphere. The South Hemisphere system, serving fewer countries, is considerably less flexible.

As one of the three World Meteorological Centers (Washington, Moscow and Melbourne), the NMC in Washington has ultimate responsibility for the Western Hemisphere portion of the Main Trunk. This includes collecting reports from various North and South American countries, performing a basic quality-control function on collectives of reports and retransmitting the collectives to other Main Trunk centers. This responsibility also insures the receipt of all available global data at the NMC, providing the CAC and the JAWF with the most complete data coverage possible.

Over the years, the GTS has performed data transmission tasks in an admirable manner, even through many primary functions are based on past technology. For the future, it is quite obvious that the GTS and its many manual interfaces will have to be replaced by higher speed systems, probably associated with satellite communications. It is also foreseen that the general reliability of a future system will have to be significantly better than today's GTS.



Figure 3. Typical coverage of observations from the regular synoptic stations and the River Forecast Center (RFC) Cooperative Observer Network (approximately 6800 stations, mainly east of the Continental Divide).

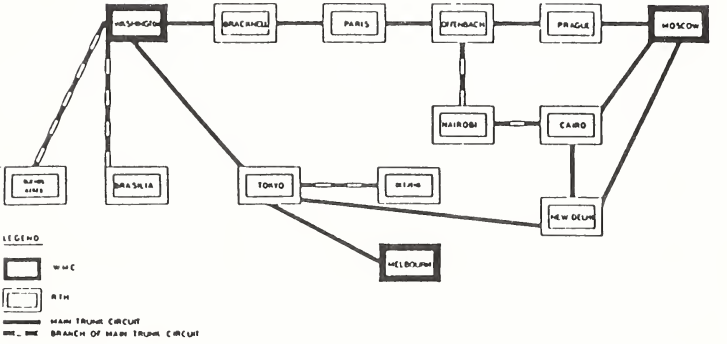


Figure 4. The Main Trunk of the Global Telecommunication System.

4. Processing of GOS Data for Agricultural Applications

One of the JAWF functions is to maintain a continuous monitoring of global weather conditions, primarily precipitation and surface temperature. The weather monitoring is mainly keyed on the definition of anomalous conditions, such as prolonged heat/cold or wetness/dryness. Such global monitoring demands a comprehensive data base for the generation of numerous products needed to carry out the evaluations.

The data base used by the JAWF is produced by the CAC from the GOS surface reports which are continously received at the National Meteorological Center. A general flow diagram of data passing through the processing system is given in Figure 5. One of the most important features of the system is the procedure for the quality control. The quality-control effort is necessary since meteorological data are subject to many different types of errors, both systematic and random. It is a fact that even one erroneous report may have a detrimental effect on a particular impact evaluation. Since manual correction of errors is very time consuming, it is advantageous to develop as many automatic procedures as possible. These procedures include checking the internal consistency of each report, as well as the temporal continuity and the compatibility with any neighboring reports.

Estimates are also made for certain stations which do not report all necessary weather elements. A procedure for precipitation estimation (Thomas and Patterson, 1983) utilizes reported present and past weather elements in order to derive a rough quantitative measure of precipitation. This estimation procedure has been found to provide slight underestimations of precipitation, but has proven very useful in certain areas of the globe.

5. Agricultural Products

Products derived by the JAWF are generally combined by the agricultural user with other information for crop impact assessment. Such assessments, of course, depend on many other variables, including soil type, planting schedules and irrigation, to name but a few (NWS, 1977). Therefore, in order to serve all of the users, many of the products have been developed for general as opposed to specific applications. In most cases, the more specific products can best be developed by the user, or by the private meteorologist serving the user. A listing of the general and specific CAC products for agriculture that are or can be readily available to the user is included in Table 1 (Finger et al., 1985; Laver et al., 1985).

An example of a specific product (Figure 6) is the Palmer Drought Index (Palmer, 1965). This product can be used to evaluate the relative wetness or dryness of an area over a term, which may be as long as a year. Short term conditions are better specified by the Crop Moisture Index. Both of these charts are based on computations for about 350 Climate Divisions in the United States. Since sufficient observational data are needed to compute average conditions (accumulated weekly precipitation and average weekly temperature) for each Climate Division, it is necessary to process much more data than are available from the U.S. operation network. Thus, where possible, data from cooperative observational networks are included.

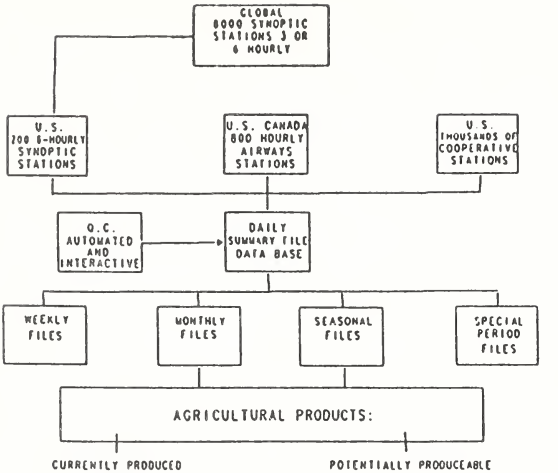


Figure 5. General Data Flow Diagram within the CAC.

Currently Produced

1. Precipitation
   a) number days .01"-.50"
   b) number days >.50" (heavy precip)
   c) percentage of normal
2. Temperatures:
   a) extreme maximum
   b) extreme minimum
   c) averge maximum
   d) average minimum
   e) average
   f) departure from normal
   g) frost/freeze days
3. Crop/Soil Moisture
   a) short term (Crop Moisture Index)
   b) long term (Palmer Index)
   c) future probabilities
   d) by state crop divisions
   e) precip needed to end drought
4. Growing Degree Days
   a) total
   b) departure from normal
5. Relative Humidity
6. Heating Degree Days
7. Cooling Degree Days

Potentially Produceable

1. Potential Evapotranspiration
2. Vapor Pressure Deficits
3. Heat Stress Index (RH & Max T)
4. Wind Chill (Wind & Temperature & RH)
5. Desiccation Index (VP & Wind)
6. Snow Cover/Depth/Amount
7. Cloud Cover/Percent Sunshine
8. Radiation information
9. Fog
10. Visibility
11. Cloud Ceiling

Table 1. Current and Potential CAC products for agricultural use. Note: Many of the products listed in Table 1, as well as other products not listed, are available on the CAC Request/Reply computer system. For information on accessing the computer, write to NOAA, Climate Analysis Center, W/NMC53, Room 201, World Weather Building, Washington, D.C. 20233.

The more general products consist of various data tables and analyses of pertinent meteorological variables and all of this information can be used for a variety of global agricultural assessments. Many of these products are integrated into the Weekly Climate Bulletin (CAC, 1985b). A similar bulletin (Figure 7) is produced on a monthly basis (CAC, 1985a). As can be seen, the global chart portrays areas of anomalous precipitation and temperature. Special bulletins are issued when the anomalous conditions become a threat to agriculture, or indeed, human safety.

6. Meteorological Information from Satellites

Global meteorological data and related products provide quick and accurate assessments of world-wide agricultural conditions. As previously indicated, the global synoptic data base provides insufficient information in several areas, primarily due to lack of observational stations, problems in observational and/or communications procedures and erroneous meteorological reports. These problems lead to the use of other possible data sources, primarily those associated with various meteorologically oriented satellites. These include polar-orbiting and geostationary systems and also include LANDSAT, a specialized land remote sensing system. The various types of systems are depicted in Figure 8.

The polar orbiting systems producing global cloud information are indicated in the interior portion of Figure 8 and include NOAA systems (Epstein et al., 1984) which orbit the Earth 14 times per day, viewing both the day and night sides of the globe. Each NOAA polar satellite yields two global views per day of 4 km resolution in the visible and infrared radiation spectrums. Additional polar-orbiter satellite information is generally made available on the GTS from the METEOR satellite operated by the USSR.

The geostationary satellites are placed into a geosynchronous orbit (e.g. rotating at the same angular velocity as the Earth) above the equator. The operational satellite configurations (NESDIS, 1985) are shown in the exterior of Figure 8. This includes GOES West (135°W), GOES East (75°W), both operated by the USA (NOAA), METEOSAT (0°) operated by the European Space Agency, GMS (140°E) operated by Japan, and INSAT (72°E) operated by India. GOES West was temporarily repositioned at 90°W in 1984 when GOES East became non-operational. A replacement for GOES-East is scheduled for Spring, 1986. Visible and infrared (IR) imagery are the basic products of the geostationary satellites.

The positioning of the geostationary satellites permits scanning of nearly the full earth disk. Since the sensors provide an image every 30 minutes and occasionally as frequently as 5 minutes, a near-continuous monitoring of cloud conditions is possible. These satellites are also useful collection points for relaying environmental data from remotely located collection platforms (e.g. buoys and balloons) to a variety of users.

LANDSAT 4 and 5 (USA) spacecrafts orbit the Earth in a sun-synchronous, near-polar orbit. High resolution allows very detailed views of the earth's surface. However, a disadvantage that results from this resolution is a scan cycle for any location once every 16 days. In addition, data can only be

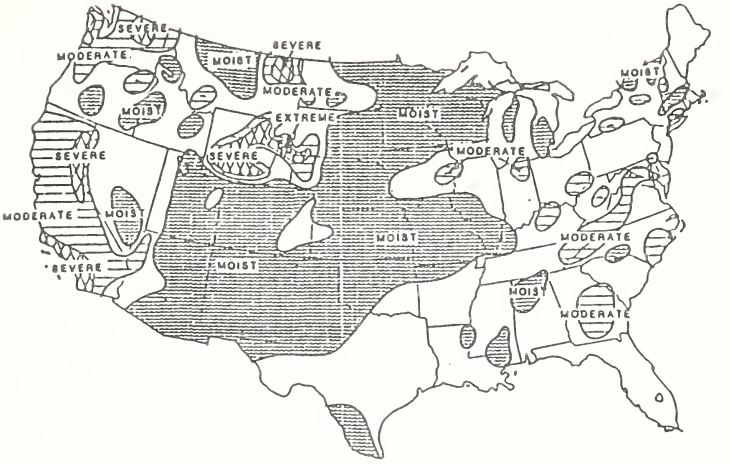


Figure 6. The Palmer Drought Index (PDI) for Oct. 5, 1985.

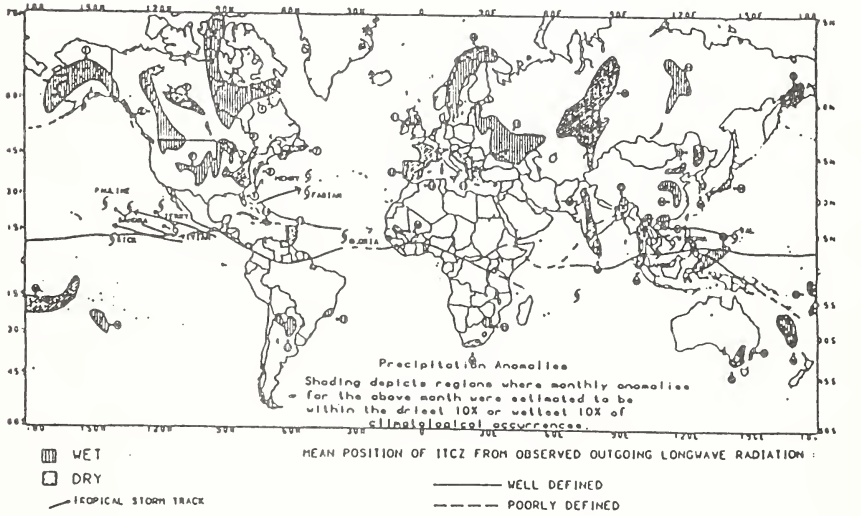


Figure 7. Monthly Climate Bulletin precipitation anomalies for September, 1985.

collected when the spacecraft is within view since there are no onboard recording capabilities.

Of all the meteorological parameters, precipitation is probably the most important to agriculture. As a result, there are several projects underway to develop systems for evaluating this variable from various satellite data, particularly cloud images. The most simple approach is the subjective viewing of the images to relate perceived cloud brightness to precipitation. In general, the level of brightness is positively correlated with the occurrence of precipitation. Thus, the viewing of the images, along with any available surface reports from the GTS, can at least provide more confidence in the general evaluation of precipitation over a given area.

More useful information can be derived from quantitative precipitation procedures. These procedures also relate cloud brightness and/or various spectral radiance values to precipitation amounts by utilizing complex computer operations. Once correlations between cloud brightness and precipitation (depending on season, latitude, etc) are established through various research efforts, estimation of precipitation amounts should become a tractable problem. Along with precipitation, there are several other satellite-derived meteorological and agricultural parameters currently being tested for future use. A considerable effort is being expended to obtain these parameters by several groups (Arkin, 1983; McGinnis and Tarpley, 1985; Moses, 1985; Rasool and Bolle, 1984; Rossow et al., 1985; Spenser and Santek, 1985; Tarpley, 1984). A summary of current and potential satellite products/parameters with interest to agriculture is included in Table 2.

7. Future Observations

The GOS direct surface observations yield the most accurate meteorological data for use in agricultural assessments. As indicated, there are weaknesses in the system, but many of these weaknesses can be expected, considering the great complexities and manual efforts expended to measure and communicate the information. On a global scale, continuing efforts by the WMO in monitoring the surface data reports have uncovered a number of systematic problems. The solutions have had a significant positive effect on the data base.

In the United States it has been recognized that data from the regional and local networks, if received at meteorological centers in time for operations, can provide an important added component for agricultural assessment. Thus, efforts have begun to provide communications systems for this purpose.

The role that remote sounding instrumentation will play in providing future observations is not yet fully known, but variations of that system certainly have great potential. Some advantages of satellite observations are complete global coverage and high density data. On the other hand, remote systems do not provide direct surface measurements so caution must be exercised. Further research is still needed to properly blend the direct and indirect measurements together in order to derive the full benefits of each system.

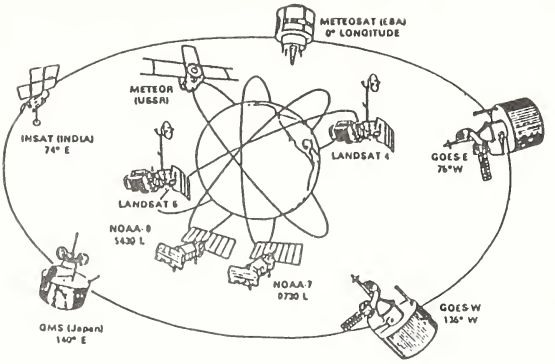


Figure 8. The Operational Earth Observation Satellites.

- o precipitation
- o surface albedo
- o insolation (incoming radiation)
- o irradiance (outgoing radiation)
- o wind speed/direction (low and mid-level)
- o snow cover
- o Max, Min Temperature (freeze days)
- o Max, Min Dew Point Temperature
- o cloud cover parameters
- o percent cloudiness
- o evapotranspiration
- o hurricane classifications
- o dust
- o fog
- o severe convective storms
- o soil moisture
- o yields
- o biomass
- o percent cover
- o LAI (Leaf Area Index)
- o wildland resources
- o land use & cover
- o pest management
- o erosion (sediment in water)
- o coal resources
- o soil/irrigation/drainage problems
- o crop conditions (nutrient problems)
- o shallow water areas
- o man made features
- o chlorophyll absorption
- o vegetation moisture/index
- o soil/rock formation

Table 2. Agriculturally related satellite products/parameters currently or potentially produceable.

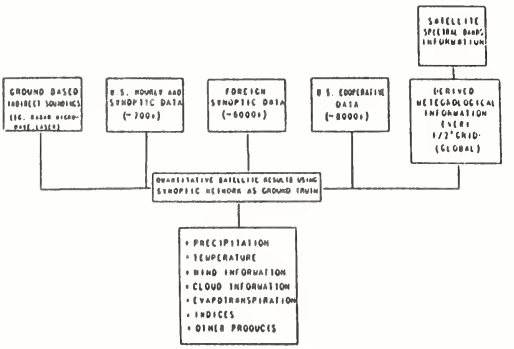


Figure 9. Future data base for agricultural use.

Ground based indirect measuring instruments, such as radar, various types of radiometers and lasers are other potential data sources applicable for agricultural assessment (Tucker et al., 1979; Allan, 1983; Boers et al., 1984). Most of these instruments are currently in experimental stages and will require further testing, refining and evaluating before being operationally used. It is very important that data from the various sources be used to fully complement one another (Figure 9). For example, surface reports can be used with derived satellite precipitation in different ways. The reports can be utilized for a continual ground truth system which allows adjustments of the global satellite derived precipitation field. They can also be utilized along with the satellite derived precipitation field to increase the confidence of the global evaluations.

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OUTLOOK FOR TIMBER PRODUCTS
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Forest Service, USDA

Annual Agricultural Outlook Conference
Session 24, Washington, D.C.

For Release: Thursday, December 5, 1985

The demands for most timber products are largely determined by the levels of activity in several important end-use markets. So before discussing demands for the various products, I would like to review trends in these markets and take a look at current estimates of their strength this year and early in 1986.

General Economic and Major Domestic Market Trends

Activity in the major United States timber products markets showed mixed trends through the first half of 1985. However, in the third quarter, continued improvement in the rate of overall economic growth, relatively lower interest rates, declines in the dollar exchange rates, and trends in several of the major economic indicators suggest that growth in most domestic markets and exports are likely to improve in the last quarter of the year and continue moderately higher in early 1986.

The gross national product, a measure of the Nation's total output of goods and services, and the most comprehensive indicator of total economic activity, rose at an annual rate of 2.1 percent through the first nine months of 1985, reaching $1,689 billion (1972 dollars). Although this increase was only a third as large as the 6.1 percent rise registered in the first three quarters of 1984, growth has been accelerating since early in the year. Estimates by the U.S. Department of Commerce late last month put third-quarter growth at an annual rate of 4.3 percent, more than double the rate of increase in the second quarter, and far above the 0.3 percent first-quarter rise. Although there is some diversity of views among economists regarding the extent and length of the current upturn, most expect economic activity to continue at higher levels in the last months of 1985 and in the first half of 1986. A continuation of growth in the last quarter at about the current pace would mean that the GNP for 1985 would be about $1,684 billion (1972 dollars), 2.7 percent above the average for 1984. For 1986, a slightly higher rate of about 3 percent would mean a further rise to near $1,735 billion.

Trends in new construction, the most important domestic wood products market, vary with the type of construction. New housing units, which typically account for more than a third of total United States annual consumption of softwood lumber and plywood and for substantial volumes of other softwood and hardwood products, were started at an annual rate of over 1.8 million units through the early spring of 1985. Over the next five months, starts

fluctuated month to month but averaged only 1.67 million, and dropped to a low for the year in September, before rebounding in October. The October annual rate, 1.76 million units, was more than 10.6 percent above that for September and represented the largest monthly increase since March. According to Bureau of the Census estimates, actual housing starts during the first ten months of 1985 totaled 1,497,000 units, only 2 percent fewer than were started during the first 10 months of 1984.

Industry analysts generally attribute the increasing start activity in October to the continuing declines in the mortage interest rates, to the relatively high levels of new-single family home sales during the summer and the need to replenish stocks, and to the improving economy. Mortgage interest rates have been generally trending downward since April, and although the seasonally adjusted annual rate of new single-family home sales dropped in September and October, sales for the year were still ahead of sales for the same period in 1984. In contrast to the improvement in starts and the relatively high sales of single-family units, the number of building permits issued, an indicator of future construction activity, declined in October. Analysts attached little significance to this because of the continuing large backlog of unused permits accumulated over the preceding five months.

Although there remains some diversity of opinion, most economists feel that mortgage interest rates are not likely to turn up again in the near term, and that the current relatively high levels of starts, sales, and permits outstanding mean that moderately stronger housing activity will continue in the last months of 1985 and into 1986. Recent estimates of housing starts for 1985 fall between 1,720,000 and 1,780,000 units, with the current consensus at 1,750,000, about the same number of units as was started in 1984. Analysts' forecasts for 1986 have a somewhat wider range; however, most estimates available in mid-November show starts near or slightly below the number forecast for 1985. Shipments of mobile homes, down about 5 percent through September, are likely to follow the same general trends shown by housing starts in the remainder of 1985 and in 1986.

Through the first 10 months of 1985, single-family units composed about 62 percent of all private starts (seasonally adjusted annual rate basis), little changed from the same period in 1984. For all of 1985 and for 1986, single-family units are likely to account for a slightly higher percentage. Any change in the proportion of single-family units has a special significance for the timber products industries because average use per unit of most wood products is much larger in single-family houses than in multifamily units and mobile homes.

Although new housing construction in 1985 was slightly below year-earlier levels through October, additions and alterations to residential structures, another important wood products market, has been particularly strong. Through the first nine months of 1985, expenditures for this type of construction averaged $16.5 billion (seasonally adjusted annual rate, 1977 dollars), nearly 19 percent above expenditures during all of 1984. Most observers expect continued gains in late 1985 and 1986.

In contrast to new housing, new nonresidential construction activity grew fairly rapidly through the first five months of 1985, dropped sharply in June and July, and has since continued to rise, but at a slower pace than earlier in the year. Much of the decline and subsequent increase was for nonresidential buildings, the major wood-using segment of the nonresidential market. The seasonally adjusted annual rate of expenditures for all nonresidential construction in September was $124.9 billion (1977 dollars), up 2 percent from August and almost 15 percent above the total for all of 1984.

A number of factors, including slow overall economic growth, flat capacity utilization in many industries, and overbuilding of office space in some major markets, apparently contributed to the mid-year declines. These same factors also likely caused the downward revision in industry capital investment plans for the last quarter of the year shown by the latest U.S. Department of Commerce survey of anticipated expenditures for plant and equipment. However, the survey on which these estimates were based was completed in July and August. If the economy continues to improve, it is possible that total nonresidential construction activity will not decline appreciably in the last quarter and could be expected to increase in 1986.

The index of manufacturing production--an important indicator of the demand for pallet lumber, container board, and some grades of paper--rose to a seasonally adjusted value of 128.1 (1977=100) in August, but has remained virtually unchanged since that time. The October index, 127.9, was about 2 percent above the January index, and only 3 percent above the average for all of 1984. The indexes for the major wood using industries--furniture and fixtures and paper and products--have shown somewhat different trends. The index for furniture and fixtures in September was 144.5, slightly below the July index, but 6 percent above the average for 1984. On the other hand, the index for paper and products has increased since July to 129.3; however, this represents a gain of only 2 percent from the 1984 average. Despite the relatively flat trends, most economists feel that production in most industries should slowly continue up in the last quarter if economic activity continues to increase as expected.

In summation, trends in the major domestic markets for most timber products have been mixed over the first three quarters of 1985. However, many of the important indicators seem to point to slightly higher levels of consumption in the last quarter of the year and in 1986.

International Markets

The United States is the world's leading importer of timber products--chiefly softwood lumber, wood pulp, and paper and board fron Canada, and veneer and plywood from southeast Asia. The total value of these imports in 1984 was $12.2 billion, about 3.8 percent of the value of all U.S. imports. In terms

of roundwood equivalent (i.e., the estimated amount of wood required to produce the individual products), more than a fifth of our apparent consumption of timber products has been imported.

The United States is also a major timber products exporter. In 1984, the total value of timber products exports was $7.2 billion--about 3.4 percent of our export total. Although we ship a wide variety of timber products to many different countries, our principal export markets are Japan for softwood logs and lumber, pulp chips, wood pulp, and paper and board products, and western Europe for lumber, plywood, wood pulp, and paper and board. Recently China has also become an important and growing market for softwood logs.

According to data presented at the October meeting of the Timber Committee of the Economic Commission for Europe, economic growth in most of our major European markets has proceeded at a relatively slow pace in 1985, with new residential construction a weak sector of many of their economies. As a result, exports of most products to these markets through September of 1985 were down from the similar period last year. In contrast, exports to Japan, China, and Taiwan were somewhat larger than in the first nine months of 1984. Overall, the outlook for U.S. international trade appears somewhat improved for most products in 1986; however, exports to some countries likely will be only marginally larger than in 1985.

Timber Products Consumption, Trade, and Production

Softwood Lumber

In response to the increased year-to-year activity in nearly all its important markets, except housing, softwood lumber consumption through the first three quarters of 1985 was about 1 percent above that of the same period in 1984. Currently available information on trends in housing and the other markets in the last weeks of the year suggests that consumption will likely continue slightly above year-earlier levels. Thus, consumption for all of 1985 is estimated at about 43.6 billion board feet, some 0.7 billion board feet above the record 42.9 billion consumed in 1984 (table 1).

Imports of softwood lumber, chiefly from Canada, have increased rapidly over the past 10 years, rising from 5.7 billion board feet and 18 percent of our apparent consumption in 1975 to 13.3 billion and 31 percent in 1984. This trend has continued in 1985. Through September, total imports of softwood lumber were almost 1.2 billion board feet above year earlier volumes and accounted for more than a third of estimated U.S. softwood lumber consumption. About 95 percent of the increased volume was imported from Canada. A continuation of current trends would push total imports for 1985 to a record 14.7 billion board feet. Exports are likely to decline about 5 percent to 1.5 billion board feet.

Table 1.--Wood products production, consumption, and trade

(1982-84 actual, 1985 projections)

Product	Year	Domestic production	Imports	Exports	Apparent consumption
Softwood lumber (billion bd. ft.)	1982	24.9	9.1	1.6	32.5
	1983	28.9	12.0	1.8	39.2
	1984	31.2	13.3	1.6	42.9
	1985	30.4	14.7	1.5	43.6
Hardwood lumber (billion bd. ft.)	1982	5.1	.2	.4	4.9
	1983	5.6	.3	.5	5.4
	1984	6.2	.3	.5	6.0
	1985	6.5	.4	.4	6.5
Softwood plywood (billion sq. ft., 3/8-inch basis)	1982	15.1	1/	.5	14.7
	1983	18.3	1/	.6	17.8
	1984	18.9	.1	.4	18.6
	1985	19.3	.1	.3	19.1
Hardwood plywood (billion sq. ft., 3/8-inch basis)	1982	.9	1.1	1/	2.0
	1983	1.0	1.6	1/	2.6
	1984	1.0	1.5	1/	2.4
	1985	1.0	1.6	1/	2.6
Particleboard 2/ (billion sq. ft., 3/4-inch basis)	1982	2.9	.3	.1	3.1
	1983	3.7	.4	.1	4.0
	1984	4.0	.6	.1	4.5
	1985	3.8	.6	.1	4.3
Hardboard (million tons)	1982	1.7	.2	3/	1.8
	1983	2.1	.2	.1	2.3
	1984	2.0	.3	.1	2.2
	1985	2.0	.2	.1	2.1
Insulation board (million tons)	1982	.7	3/	3/	.8
	1983	.9	.1	3/	.9
	1984	1.0	.1	3/	1.0
	1985	.9	.1	3/	1.0
Pulpwood (million cords)	1982	81.7	1.4	2.4	80.8
	1983	87.9	1.7	2.0	87.6
	1984	91.6	1.8	1.9	91.5
	1985	90.4	.7	1.9	89.2

1/ Less than 50 million square feet.
2/ Includes medium-density fiberboard.
3/ Less than 50,000 tons.

Note: The projections shown for 1985 are based on the trends in the major markets discussed in this paper and should not be viewed as forecasts of actual volumes. Data presented are subject to rounding.

Despite the record levels of consumption realized through September, all of the increase was supplied by imports and U.S. production of softwood lumber was below the year-earlier level. For all of 1985, production is estimated at 30.4 billion board feet, down about 2.6 percent from total output in 1984.

If housing shows only a marginal decline in 1986, and activity in the other important softwood lumber markets are increased by the prospective rise in economic activity discussed earlier, consumption could continue up in 1986, though any increase is likely to be small. Exports are also expected to be slightly above those in 1985; however, the extent to which production is influenced by any increase in consumption will depend on imports.

Although consumption has reached record levels in 1985, the price of domestically produced softwood lumber has failed to keep pace. There was some fluctuation in early summer, however, by October, the producer price index for softwood lumber had declined to 331.2 (1967=100) (table 2).

Table 2.--Producer price indexes for selected wood products

(1967=100)

Product	Annual			October	
	1982	1983	1984	1984	1985
Softwood lumber	321.6	369.8	353.9	333.8	331.2
Hardwood lumber	262.4	283.7	319.7	319.3	301.9
Softwood plywood	282.1	310.4	303.6	309.5	308.9
Hardwood plywood[1/]	181.0	179.8	180.3	175.6	162.1
Particleboard[2/]	[3/]	106.3	116.6	114.8	105.0
Hardboard	228.5	234.4	233.6	233.0	239.6
Insulation board	250.9	262.7	269.7	272.2	290.5

1/ Hardwood plywood and related products.
2/ Platen-type. December 1982=100.
3/ Not available.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

This was about 1 percent below the index for October 1984 and indicated the lowest prices since late in 1982. Although some individual species and grades have not followed the downward trends and will likely continue to command higher prices, no sharp demand-induced overall price increases are likely as long as production remains depressed.

Hardwood Lumber

Activity in most of its major markets has also caused increases in hardwood lumber consumption in 1985. Through the first nine months of the year, consumption was about 10 percent ahead of the same period in 1984. Although available data indicate that use may be moderating in the fourth quarter, apparent consumption for the year is likely to reach 6.5 billion board feet, about 8 percent above total use in 1984.

Hardwood lumber imports through September were 16 percent above the similar period in 1984. Although some slowing is possible, the total for the year is likely to rise to near 0.4 billion board feet, up about 0.1 billion. Data through September show exports down by more than 20 percent, and the total for the year also is expected to be 0.4 billion board feet, a decline of about 0.1 billion from the volume exported in 1984.

Production of hardwood lumber in 1985, based on these estimates of consumption and trade, would increase about 6 percent to 6.5 billion board feet. Anticipated slow growth in the major domestic markets and increased demands for exports, though possibly small, suggest some additional increase in consumption, imports, exports, and production in 1986.

Hardwood lumber prices have also been trending down in 1985. The October 1985 producer price index was 301.9 (1967=100), about 5 percent under October 1984 and the lowest value in nearly two years. Prices for hardwood lumber are generally more stable than those for softwood lumber, but in many instances tend to follow the same general trends.

Softwood Plywood

Many markets for softwood plywood have remained relatively strong in 1985, with increases in other sectors offsetting the slight decline in housing construction through October. Consumption in 1985 is likely to rise to 19.1 billion square feet (3/8-inch basis), up about 2.6 percent from total use in 1984.

Data for the first nine months of 1985 indicate exports down about 25 percent from year-ago volumes, and as a consequence the total for the year is expected to to drop to 0.3 billion square feet. Although imports were up during the same period, they remain relatively small and are expected to total 0.1 billion.

With these levels of consumption and trade, production for the year will increase to 19.3 billion square feet, up about 2 percent from total output in 1984.

Softwood plywood prices have fluctuated in 1985, declining to a low index value of 286.4 (1967=100) in March, followed by a sharp increase in the spring. Since June, prices have slowly declined, and in October, the index was 308.9, about 8 percent above the March value, but still below the averages for 1978 and 1979.

Hardwood Plywood

Consumption of hardwood plywood in 1985 is expected to be near 2.6 billion square feet (3/8-inch basis), about 8 percent above the volume used in 1984. Trade data through the third quarter of the year indicate that imports are likely to total 1.6 billion square feet, also about 8 percent more than in 1984. Exports are expected to remain relatively small.

Given the trends in consumption and trade, production of hardwood plywood in 1985 is estimated at 1.0 billion square feet, about the same volume as was produced in 1984. Much of the hardwood plywood consumed each year is used in residential construction. As a consequence, a small decline in consumption, imports, and production is probable if this market does not reach the levels attained in 1985.

The hardwood plywood price index has remained unchanged at 162.1 (1967=100) since January; however, at that level prices are below the average for any year since 1978.

Particleboard

Activity in the major markets and shipments data from the National Particleboard Association indicate that combined consumption of particleboard and medium-density fiberboard through mid-summer was down from year-earlier levels. For the year combined consumption of these two products is likely to total about 4.3 billion square feet (3/4-inch basis), about 4 percent below total use in 1984. Data for the first nine months of 1985 suggest that imports are likely to be 0.6 billion square feet, very near the volume imported in 1984. Exports will be about 0.1 billion square feet.

With the estimates of consumption and trade discussed above, production in 1985 should be close to 3.8 billion square feet. A small increase in consumption is possible in 1986 if markets follow the trends described earlier. In general, prices of particleboard, as indicated by the producer price index, have followed the same declining trends in 1985 as have the other major timber products.

Hardboard and Insulation Board

Hardboard consumption in 1985 is estimated at 2.1 millon tons, about 4 percent below consumption in 1984. Imports are expected to drop by about 20 percent to 0.2 million tons, and exports to remain unchanged at 0.1 million tons. With these levels of consumption and trade, production would amount to 2.0 million tons, about the same volume as was produced in 1984.

Markets during the first three quarters of 1985 indicate that consumption of insulation board for the year will be near 1.0 million tons--slightly below total use in 1984. Imports are expected to be about 0.1 million tons and exports to be less than half as large. Consequently, production is likely to drop to about 0.9 million tons, also down slightly from the volume produced in 1984.

Pulpwood

Through September, paper and paperboard production, and as a result, wood pulp consumption and production were about 3 percent below year-earlier levels. If overall economic activity continues up in the last quarter, some improvement in demand is possible. However, with these trends, pulpwood consumption (roundwood and chips) in 1985 is expected to total about 89.2 million cords, down about 2.5 percent from the record volume consumed in 1984.

Imports of pulpwood, mostly pulpwood chips from Canada, have declined very sharply in the first nine months of 1985 according to available Bureau of the Census data. As a result of this trend, imports for the year are expected to total 0.7 million cords. Exports are estimated at 1.9 million cords. These volumes are respectively, 60 percent below and about the same as 1984 imports and exports.

Given the above estimates, production of pulpwood in 1985 is expected to drop to about 90.4 million cords, 1.4 percent less than was produced in 1984. Prospective continued improvement in economic activity suggests that the upward trend in consumption and production will likely resume in 1986, though at a somewhat pace than in the 1982-84 period.

Softwood Log Trade

Exports of softwood logs during the first three quarters of 1985 were up about 15 percent from the similar period in 1984. Shipments to Japan, the leading U.S. softwood log export market, rose about 4 percent; however, the major factor in the overall growth was the 50-percent increase in exports to China, a market that has been growing rapidly over the last five years. Exports for the year to all destinations have been estimated at 3.8 billion board feet, about 400 million more than in 1984. Shipments to China will

very likely exceed 1.0 billion board feet for the first time. Industry sources indicate that small additional growth in most markets is probable in 1986.

Imports of softwood logs, nearly all from Canada, have declined somewhat in 1985, and are expected to total about 0.1 billion board feet in both 1985 and 1986.

Hardwood Log Trade

Hardwood log exports for 1985 are estimated at 0.1 billion board feet. Although the volume is relatively small, most of the hardwood log shipments in 1985 and in recent years have been composed of high quality oak, walnut, and other preferred species that are in relatively short supply and command premium prices in U.S. domestic markets.

Hardwood log imports in 1985 are expected to be close to 30 million board feet, about the same volume as was imported in 1984.

Industrial Roundwood Summary

Given the trends in consumption, trade, and production for the various products in 1985, total U.S. consumption of all industrial roundwood products (i.e., all roundwood products except fuelwood) is expected to be slightly above the volume consumed in 1984. Imports will also be somewhat above the 1984 level, but total exports are likely to show little change. Because the increase in total consumption will be supplied by imports, total production of all timber products likely will be slightly below output in 1984. Consumption, imports, exports, and production should all increase slightly in 1986 if the major markets follow the trends discussed earlier.

Fuelwood

Current estimates indicate that the fuelwood consumed for domestic heating and cooking has risen to more than 46 million cords. Various surveys of the forest products industries indicate that there also have been large increases in the consumption of fuelwood for industrial heat and power generation over the past 8 to 10 years. Apparently much of the wood being used for domestic purposes is produced by the consumers from trees in urban areas, fence rows, dead forest trees, and other similar sources not normally drawn upon for industrial timber. Most of the growth in use by the forest industries has come from increased utilization of logging and mill residues.

Because most of the increase in fuelwood consumption has come from such sources, presumably there has been little significant impact on the prices and availability of industrial products such as pulpwood. Moreover, the

rapid growth seen during the mid- and late 1970's apparently has slowed. In the longer term, however, if fuelwood use continues to grow, it will undoubtedly begin to affect the supplies and prices of other products and especially so in the future when demands for many products are expected to increase in response to rising population and economic growth.

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The Forest Products Outlook With An Emphasis on the Impact of Canadian Imports of Softwood Lumber

I appreciate the opportunity to discuss the current outlook for the lumber and wood products industry. In describing the current state of affairs, I will focus on one of the major product issues affecting the outlook: the increase in the importation of softwood lumber from Canada.

A year ago, this outlook session presented a rosy picture for the wood products industry, pointing to high housing starts and other indicators of overall demand. Indeed, demand has been very strong. Housing starts last year and this year are in the range of 1.75 million. Expenditures in nonresidential construction reached a record level last year and is surpassing that level this year. And the alteration and repair market is nothing short of booming in terms of demand.

While demand has been very strong, performance in the wood products sector has been disappointing; the wood products industry has not shared in the economic recovery being experienced by other sectors of the economy. The value of total product shipments has remained flat for three years, and has declined in real terms. Since 1979, the last peak year before this recovery, the inflation adjusted value of total product shipments has declined by 27 percent. Isolate softwood lumber from the total of all product shipments and the decline is even more dramatic at 32 percent. The producer price index of softwood lumber has declined in 4 of the past 5 years.

CAUSES OF INCREASING CANADIAN MARKET SHARE

What has happened to the lumber and wood products industry? On the surface the answer is obvious: oversupply has resulted in depressed prices and the spiral won't stop. Producers increase volume to compensate for lower prices and the situation breeds on itself. But what has caused the oversupply? There are several factors, but one in particular has beset the industry to the point of seeking government action.

On the one hand, encouraged by government forecasts for high demand, continued inflation, and higher prices, the industry invested heavily in new mills and expansions of existing facilities. It is not unusual to learn that a given mill has increased its capacity by 20 percent or more as a result of changes made during the past few years. At the same time softwood lumber imports, particularly from Canada began to rise quite dramatically. It turns out Canadian producers also increased their capacity in spades.

Imports of Canadian lumber now account for over 33 percent of U.S. consumption. That's up from 30.8 percent last year, and 18.7 percent in 1975. Their share of the market has been steadily increasing even during the off years when total consumption was down. Imports will account for 14 billion board feet of the 43 billion board feet of consumption this year.

Canadian producers have been successful in the U.S. market for several reasons, the main reason being access to a relatively inexpensive timber supply. Raw material or timber (or stumpage) comprises the single largest cost component in the production of lumber. A competitive advantage can be had when a producer obtains the raw material at a more favorable price than his competitors, a competitive advantage that can have quite an impact on trade in a deeply competitive market. Such is the situation between Canadian and U.S. producers. Stumpage is in most cases dramatically lower in price for the producer in Canada than in the United States. The difference results from differing systems of valuing and pricing timber.

In Canada, over 90 percent of the commercial timberland and the annual harvest is from publicly owned lands. The provincial governments which sell timber do so using long term licenses and agreements; producers are thus assured a future supply for the length of their agreement. The timber is typically priced using a residual value appraisal system, not unlike what is practiced on public lands in the United States. Simplified, all costs of production, including logging and hauling, are deducted from the final product price of the lumber, and a percentage is factored out to provide for profit and cover risk; the result is a

"residual" value for the standing tree. The final price adjusts to changes in the market price of the finished good. The appraised price under this system is the transaction price; it guarantees a percentage for profit and is based on broad average costs in a given region within a province.

In the United States, timber held on public lands is appraised predominantly on a residual value system (or less frequently on a transaction evidence method). However, in contrast to Canada's largely public-held timber source, over two-thirds of the annual harvest in the U.S. comes from private lands. All timber is sold in competitive situations, with the owner seeking the highest bid from several potential buyers. Unlike in Canada, where the appraised price is the transaction price, here in the U.S. the appraised price merely serves as a minimum upon which bids are accepted. Hence, producers in a highly competitive situation generally bid higher than the minimum price in order to obtain the raw material.

The Canadian system results in a low risk environment for the producer; it enables him to operate successfully whether the market is soft or hard, and enables him to use his reduced risk to an advantage in increasing capacity. The likelihood of profit is greater since the pricing system factors an allowance for profit, and the timber supply is assured over a long period of time so he can risk his capital on mill improvements and expansion of capacity rather than holding that capital in anticipation of having to make future timber purchases.

IMPACT OF GROWING CANADIAN MARKET SHARE

The impact of the Canadian system on the marketplace has been quite dramatic. The Canadians have increased their production of lumber by 96 percent since 1975, while the U.S. by only 19 percent. The infusion of imports has made for a very soft market despite a very high demand by historical standards.

Lower lumber prices have a direct bearing on timber prices in the United States and therefore on the justifications for investments in forest management. US producers must directly or indirectly bear the costs of forest management, costs which must be reflected and compensated for in timber values in order for sustained investment to occur. Depressed timber prices therefore make reinvestment difficult, if not altogether impossible, to justify. Many companies can no longer justify carrying the costs of maintaining timberland for future supply. Hence, a large amount of corporate timberland is on the market today--by one estimate, 9.5 million acres.

Changes in the U.S. market share have brought about several changes in the U.S. industry. The most obvious effect has been

direct mill closings as a result of the loss of market. This has had an impact on employment in the wood products industry; if the Canadian share had remained at the 1970-76 level of 20.8%, it has been estimated that U.S. production would increase over five billion board feet. Even at current high levels of U.S. productivity, over 15,000 U.S. lumber mill employees would be put back to work. If loggers are included, the number could be even higher.

In the currently weak positions, many companies have become prime targets for greenmail and takeover attempts. Even some well-known names have fallen to the merger move: St. Regis merged into Champion International Corporation, control of Crown Zellerbach was taken over by Sir James Goldsmith, and Pacific Lumber Company was purchased by Maxxam Group, Inc. In an effort to cut their losses and protect their position, some companies have turned to divestiture of some their wood products-related holdings; Santa Fe Industries recently announced it would entertain offers for its Kirby Forest Industries.

THE US ITC REPORT

In 1982, a group of U.S. producers sought administrative relief, filing a petition asking the Department of Commerce to impose a countervailing duty in light of a subsidized timber policy and other incentives offered to the Canadian industry. The Department of Commerce ruled against the petitioners on the ground that timber in Canada was "generally available" and therefore is not subsidized, and furthermore that delivered log prices--prices including harvesting and hauling--were not significantly different between the two countries.

This movement was reactivated this past spring as the Coalition for Fair Lumber Imports, but this time with significantly greater support and in a political climate which is more aware of the circumstances surrounding imports. The pressure in Congress has mounted, and the Administration has recognized that the wood industry is being hurt by imports. The U.S. Trade Representative asked the International Trade Commission to update its original fact-finding investigation on lumber imports conducted for the 1982 case. The new report delivered in October drew several conclusions supporting the contentions of the Coalition. For example, the ITC concluded that stumpage prices were indeed lower in Canada and, moreover, that there currently exists a significant differential in their favor on delivered prices of logs. The ITC, however, initially drew another conclusion which said that productivity in the Canadian industry was higher, a factor that gives the Canadians a market advantage. This conclusion has been rebutted by the Coalition which argues that an error was made in the use of data. The Coalition maintains that the ITC relied on data submitted by

a Canadian group. An analysis by the Coalition using U.S. Bureau of Labor Statistics and Department of Commerce data reveals that productivity between the two countries is not significantly different.

CANADIANS ARGUE EXCHANGE RATES AS CAUSAL FACTOR

Exchange rates between the two countries are frequently cited as responsible for the level of imports into the United States. There is no question that the high value of the dollar vis a vis the Canadian dollar impacts the trade relationship. The question is how much of an impact does the dollar have? It is not the major cause of the import penetration. The competitive advantage provided by less expensive and guaranteed supply of raw material is the predominant cause.

It is interesting to note that the Canadian and U.S. currencies move in tandem on foreign exchange markets. Hence the decline in the value of the dollar has not effected the relationship between the U.S. dollar and the Canadian dollar.

1986 OUTLOOK PESSIMISTIC WITHOUT RELIEF OF LUMBER ISSUE

The current status of this issue revolves both around legislation and administrative actions. Several bills have been introduced that would cause either a duty or quota on Canadian lumber. The natural resources subsidy bill would redefine the nature of a subsidy in countervailing duty law so that Commerce would have no alternative but to find with the petitioners. In addition, talks are soon to get underway between Canada and the U.S. to establish a free-trade zone, that is a removal of tariffs and other barriers between the countries. Canada seeks such an agreement because it would assure ready and priority access to the U.S. market, a market of 230 million consumers. However, members of Congress have made it quite clear to the US Trade Representative that such talks must resolve the lumber dispute before any agreement could be approved.

The prospects of successful outcome of these talks are mixed. Without the direct threat of legislative action, it is unlikely the Canadians will act to significantly change the situation. Therefore, legislation becomes very possible next year.

In my view, the Canadian government should seek to make their own stumpage system respond in a way that would increase stumpage values, hence raise revenues for the provinces. This would force producers to be more efficient and forestall protectionism. U.S. producers would be assured of a more fair playing field on both sides of the marketplace -- raw material as

well as product. Pressure on the Canadian resource base would be eased and the long term health of industries on both sides of the border would be improved.

The outlook for 1986 in the wood products industry is not very optimistic without a resolution of at least this one issue. Housing starts will be strong, even if they fall of modestly. Most economists see more of 1985 in 1986 which bodes well for the economy in general, but in wood products, the markets will be good but soft. There is no evidence to suggest that the Canadians will not make further inroads into the U.S. marketplace.

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